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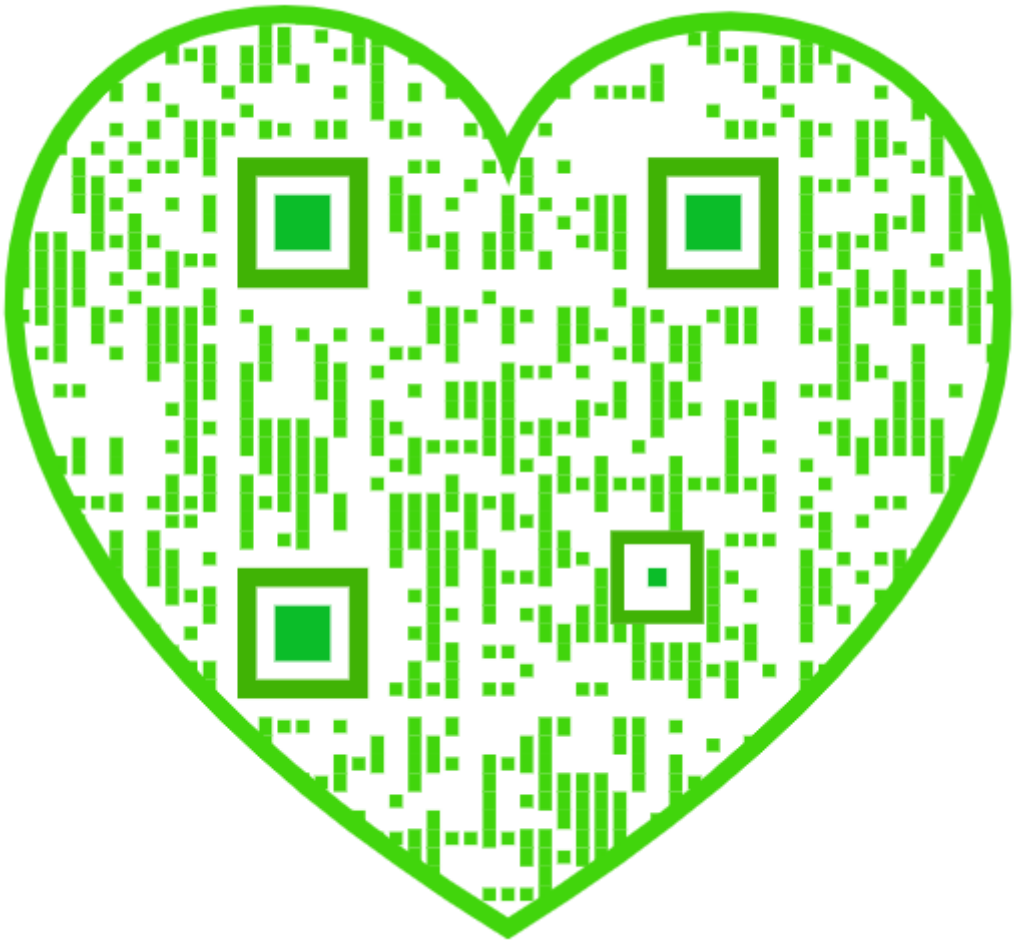
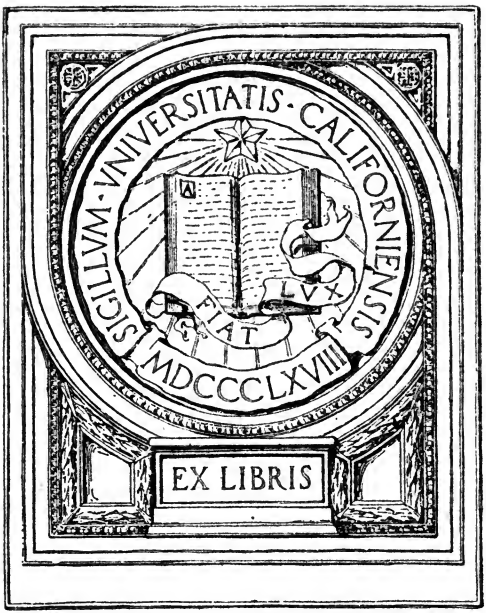
RECIPES FOR THE PRESERVING OF FRUIT, VEGETABLES AND MEAT

E. WAGNER

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RECIPES FOR THE PRESERVING OF FRUIT, VEGETABLES, AND MEAT

RECIPES FOR THE PRESERVING OF FRUIT VEGETABLES, AND MEAT

BY

E. WAGNER

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TRANSLATED FROM THE GERMAN

By CHAS. SALTER

WITH FOURTEEN ILLUSTRATIONS

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PREFACE

It has been long the desire of the author to bring out a larger useful work on the preserving industry in its present state, but the continued introduction of improvements in the last few years prevented an exhaustive report being drawn up. At present, however, we may be said to have reached a certain degree of stability, at least so far as the important matter of stoppers and closing devices is concerned.

The author has therefore, on the basis of his practical experience of over thirty years' duration, endeavoured in the present work to provide instruction for both the beginner and the expert.

The points dealt with comprise the recipes and instructions for preserving, and the necessary utensils and machinery, the work being divided into three parts: the first dealing with the preserving of fruit, the second with that of vegetables, and the third with preserved meat.

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In all recipes the weights have been given in order to minimise the chance of error, and also to enable beginners to work according to instructions.

It is also hoped that the book will be of service as an advisor and work of reference to preserve-makers and their managers; and if this result be attained, the author will have the gratification of feeling that he has supplied a genuine need.

THE AUTHOR.

1906.

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PART I.

PRESERVED FRUITS

PRESERVED FRUITS.

For simplicity this section will be divided into—stewed fruits in bottles and tins; candied fruits; fruit juices and pulps; jellies and marmalades. The manufacture of citron, orange peel, etc., is dealt with separately.

The first point to be observed is that the best utensils for boiling fruit are shallow copper or enamelled pans, about 18 inches across, 4 inches deep, and fitted with two handles. The fruit syrup for candied fruit is preferably stored in stoneware jars, or deep earthenware dishes, glazed inside, and holding about 20 lb. These must be kept in a good, dry cellar, whereas a cool room on the ground floor is sufficient for bottled fruit.

Steam-heating is the best for preserving, though fairly large quantities can be boiled over a coke fire. A few coke fires are also required for certain purposes, even when steam-heated plant is employed.

The manufacture of patent stoppers for glass vessels has now reached such a state of perfection that one or other of the various kinds on the market (*e.g.* the "Phœnix" or "Le Cachet") should invariably be used. They are fixed in position by

a machine, supplied by the makers, and make a perfectly tight joint, besides being easy to open.

The sterilising process is performed in an iron tank, fitted with a steam coil (Fig. 1) and an overlying grating, on which rest the wooden crates containing the bottles. A steam closet (Fig. 2), heated by direct steam, may also be used for this purpose.

The fruit is filled into the bottles by girls or women armed with long-handled wooden knives or brass forks.

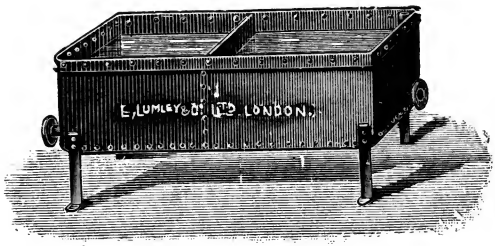

Fig. 1.

The clarified syrup should have a density of 25°.

Bottled fruits should always be sterilised for 10 minutes, from the time boiling-point is reached, in the case of ¼-bottles, 12 minutes for ½-bottles, and 15 minutes for full-size bottles. Only in the case of halved apricots, peaches, and similar fruits that lie closely together, should a few minutes extra be allowed.

Fruits that change colour when heated (*e.g.* white pears, peaches, and gooseberries) should be separated after sterilising, in order to accelerate cooling.

Green Almonds.

The fruit, gathered at the proper time, is partially freed from the adhering skin, and then boiled for several minutes in the proportion of 11 lb. of fruit

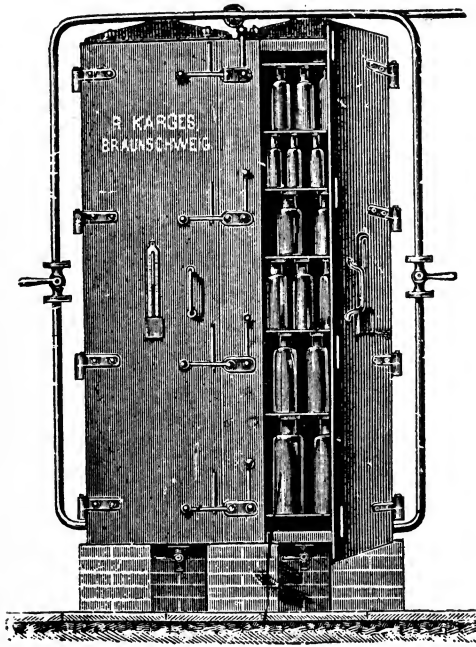

Fig. 2.—Steam closet.

to a gallon of water (containing 9 oz. of carbonate of soda). As soon as the skins have loosened, the fruit is quickly turned into cold water, cleaned, and laid in fresh water. In the evening the almonds are placed in a copper pan containing boiling water,

about ½ a pint of vinegar, and a handful of salt, the whole being stirred up and the steam turned off.

Next day the almonds are blanched in the same water, but raised to the boil very slowly, the fruit then regaining its original green colour. Boiling takes 1½–2 hours, according to quality. After cooling in repeated changes of water, the almonds are punctured with needles and immersed in sugar of 18° density. For compote the density is increased to 28° by four treatments, and the fruit is packed with fresh sugar.

In the case of syrup fruit, which is inspissated to 38°, an addition of 50 per cent. of syrup is given to prevent candying.

Gooseberries.

Only the large green kinds are suitable for preserving. The fruit is gathered when full grown, but still quite hard, "topped," and nicked with a cross cut, not too deep. When a sufficient quantity has been treated in this way, it is put into a shallow copper pan containing boiling water, with a little salt and vinegar, the pan being taken off the fire at once and placed on one side.

Next day the fruit is carefully heated in the same pan over a slow fire and gently stirred with the skimming spoon, until the gooseberries rise to the surface, whereupon they are taken off the fire and cooled with a plentiful flow of water. When cold, place in cold 20° sugar, the next day

in 22° sugar, the third day in 24° sugar, and the fourth day in 28° sugar, this time heating the fruit and sugar slowly and with care, whereupon the green colour will reappear. When cold, the berries are bottled with fresh sugar.

Garden Strawberries.

So-called "transparent" strawberries are obtained by the following method: Large, firm fruit is separated from the stalks, washed and placed on hair sieves, 10 lb. at a time. Five lb. of best sugar are dissolved in a corresponding quantity of water, mixed with an equal amount of syrup and a few drops of acetic acid, and boiled until a skin forms. The fruit is then added and boiled for about 10 minutes over a low fire, with continued shaking, until the fruit looks clear. Then skim and set aside to cool, afterwards return to the fire, boil up, skim and recool. Colouring is added after the first boiling. A little water must be sprinkled in at each boiling, in order to keep the density of the syrup down to 32° when finished.

Another method of preserving strawberries is to dissolve a suitable quantity of sugar to a solution of 32° density, colouring it with fruit red. A flat copper or enamelled pan is half-filled with the cleaned fruit, and sufficient syrup to cover it. The pan is placed on the fire and the contents raised to boiling, with continued shaking, then taken off and skimmed. After several hours the pan is put on the fire again, boiled and skimmed, and this

operation is repeated until the syrup has thickened sufficiently. If properly managed, a batch of fruit can be finished in one day. For bottling it is preferable to use fresh, coloured syrup, the other being utilised for strawberry syrup.

Wild Strawberries.

Dry, very ripe wild strawberries are picked over, placed in flat enamel pans, and covered with boiling, coloured sugar of 30° density. After cooling, the whole is heated to boiling, skimmed, and recooled.

The fruit is bottled with the same sugar, with the aid of a perforated spoon, care being taken to have the fruit and sugar in the right proportions.

Currants.

Large berries are taken, carefully separated from the stalks, and placed in a shallow pan, boiling, red-stained sugar of 30° strength being poured over them. At the end of several hours the whole is gradually raised to the boil, skimmed, and allowed to cool before bottling.

Unstoned Cherries.

Hard, dark-coloured cherries are separated from their stalks, and heated in water, with continued stirring, until the stones have somewhat loosened without the fruit bursting. Remove quickly, and place in hot 18° sugar. When cold, bottle with the same sugar, diluted to 15° and filtered.

Stoned Cherries.

Large, white-heart cherries are used, the colour having been improved by sulphuring them overnight. After stoning, the fruit is blanched by strong ebullition, and as soon as nearly soft, is treated with sufficient new-red to impart a fine colour. It is then placed in red-stained sugar (20°) and left all night, covered over with paper. Next day concentrate to 28°, in stages of 3°, and boil to a finish.

In bottling, take care that the hollows of the fruit are filled with sugar to prevent the top layer of fruit from becoming dry after evaporation.

Unstoned Mahaleb (Scented) Cherries.

The darker kinds are used for bottling. The treatment is the same as for ordinary cherries with the stones in.

Black (Unskinned) Nuts.

The time for preserving these is July. The nuts should not offer the slightest resistance at the tips when cut with a knife, though they must be properly developed. The nuts are pricked all over with stout needles, and placed in a tub of water, where they are left for 10–14 days, the water being changed daily.

They are next blanched with plenty of water in large pans, this taking about 2 hours, so that they

no longer stick to an inserted needle, after which they are carefully moistened.

The sugar used on the first day should be cold and of 15° density, being concentrated to 18°, and recooled for use on the second day. This concentration is repeated (3°) daily, the sugar being always used cold and the nuts kept in a cool place. When 28° is reached the sugar is poured on hot, and the nuts lightly boiled up with it.

Pack with fresh sugar, placing a small packet of cloves and cinnamon in the bottle. If the nuts are to be kept in storage receptacles for subsequent use, they should be placed in sugar overnight, and put into gallon jars with hot sugar (28°), then fastened down and stewed for ½ an hour in a water-bath.

White Nuts.

Only the largest and finest nuts should be used, the common sorts being left alone.

In peeling, cut off sufficient at top and bottom to reveal the white flesh; then finish peeling with eight to ten circular cuts, and place in water containing "neutralin" (*q.v.*). When a sufficient quantity has been done, they are slowly blanched in a bright pan, in water containing a little citric acid, until the nuts will no longer stick to the needle. The work must be very carefully done, and only a copper or enamelled earthenware vessel used. The further treatment is the same as for black nuts, and must be slowly and carefully performed to prevent wrinkling.

In packing into glasses, the nuts are taken out of the first sugar, mixed with fresh (25°) sugar, and stewed for ½ an hour on a water-bath.

Apricots cut in Halves and Skinned.

Early apricots that are still hard, though already yellow, are cut in halves, skinned by hand, and laid in water containing a little neutralin. They are then heated, with constant stirring and repeated additions of water, until the fruit rises to the surface, whereupon they are taken out and cooled. Later on place them in sugar of 24° density, and the next day pack with fresh sugar (25°), and sterilise.

Unskinned Apricots cut in Halves.

The fruit must first be preserved in gallon jars. The ripe, but not overripe, apricots are divided, packed closely into gallon jars, and covered with sugar (34°). The jars are then closed, immersed in boiling water for ½ an hour, thoroughly cooled, and put into store.

In four to six weeks the fruit will have become sufficiently saturated with the sugar solution to be ready for bottling. Sugar of 25° density is used for this purpose, and the bottles are placed in hot water as usual.

Whole Apricots.

The whole apricots are pricked with needles and preserved in gallon jars as above, being after-

wards bottled. They may, however, be prepared for immediate bottling by sulphuring the fruit, blanching it carefully in water, and then treating several times with sugar.

Nevertheless, the former method is preferable when working on a large scale, since it enables large quantities of fruit to be dealt with at a time, the troublesome operation of packing being deferred until later.

Mirabelle (Small Yellow) Plums.

The plums are pricked in a machine, then placed in a large quantity of water containing a little powdered burnt alum, and slowly heated to boiling with constant stirring. As soon as they begin to float and crack, they must be taken out and placed in cold water. When cold, place them in 20° sugar, concentrate to 20°, and bottle with fresh sugar.

Greengages.

The true, round green fruit, fully grown but still firm, is pricked in a machine after the stalks have been removed, and put into a large tub with fresh water.

In the evening, water containing a handful of salt and a suitable quantity of vinegar, is boiled in a large copper pan, the drained fruit is put in, and the steam turned off. The fruit is covered with a suitable plate of copper, care being taken that there is enough water in the pan to overtop

this cover by about 4 inches, this being the only way in which the uppermost fruit can be prevented from becoming brown and useless. The small outlay involved must therefore not be begrudged. Of course a copper strainer will do equally well.

On the following day the fruit is blanched, in smaller lots, with the same water, being kept stirred with the skimming ladle until nearly boiling. When the fruit rises to the top and begins to show a network of cracks, it is taken out and thoroughly cooled in running water.

The cooled fruit is next placed in a shallow pan and covered with 20° sugar, this being concentrated on the following day to 24°, poured over the fruit again, and the whole heated. When cold once more the fruit is bottled with fresh sugar (25°).

Whole Pears.

Only certain varieties, such as muscadine pears, egg pears, French beurré pears, and rousselets, are suitable for preserving. The fruit should be full grown, but the pips still white, though with a slight tinge of brown at the tips. At this stage also the fruit will bear the sulphuring necessary for attaining perfect whiteness. The pears may also be used unsulphured, being then treated with a little neutralin (*q.v.*) in blanching.

The best way to peel the fruit is in a peeling machine, neutralin being added to the water. When a sufficient number has been peeled, the pears are

blanched in plenty of water until they no longer stick to the needle, this stage being reached in about 25–30 minutes.

When thoroughly cooled, the pears—which, of course, have had the cores cut out before peeling—are pricked and placed in a 20° solution of sugar, being then left overnight covered with paper.

The following day the sugar is concentrated to 22°, and the day after that to 25°, and heated up with the fruit, the concentration being afterwards continued (next day) to 28°, and the cooled fruit bottled with fresh sugar.

Pears that are defective in colour or spotted are coloured red on the second day, by adding new-red or fruit-red to the sugar, and heating the whole up together gradually, the further treatment being the same as just described.

Halved Pears.

The kinds suitable for this method are the summer lemon pear and summer bergamot. The fruit is peeled in the machine, cut into halves, and the cores taken out with a suitable instrument, the fruit being then blanched and treated as already described.

Cornelian Cherries.

Large ripe fruit is taken, cleaned, heated in water, like cherries, so as not to break, and placed at once in a red-stained solution of sugar (18°). Next day it is bottled, the same sugar being poured

over it after reconcentration to the original strength (18°) and filtering.

Peaches (Halved).

The best sorts for preserving are the late varieties in which the stones do not become detached, and the fruit is white fleshed with brown stones.

They must be in such a condition of ripeness that they can be peeled in the machine. The peeled fruit is cut in halves by means of a short, heavy knife, which is inserted into the furrow, a short blow being struck on a hardwood chopping board, so as to split stone and all. The stone is taken out with the same knife and the fruit trimmed up.

The peaches are blanched, a few at a time, in a copper pan with water containing a little neutralin, by heating them quickly to boiling and then leaving them to draw slowly. After cooling in plenty of water the fruit is placed in a 20° solution of sugar, which is reconcentrated next day, the peaches being bottled with fresh sugar.

It is also advisable in this case to first preserve the fruit in gallon jars containing 30° sugar, the jars being then heated in the water-bath for ½ an hour. Later on, when time allows, they can be bottled. This method gives better results.

Peaches (Whole).

The smaller varieties with green or white flesh, in which the stones become detached—the so-called

muscatel peach—are suitable. They must be ripe enough for the skin to loosen when the fruit is thrown into boiling water, boiled quickly for some time, and then thrown into cold water.

The treatment is the same as described above.

Quinces.

Only the apple quince is suitable for preserving, the pear quince being used solely for quince marmalade. The fruit is peeled in a machine, cut up into six to eight pieces, and the cores cut out with care. The water should contain a little neutralin.

When a sufficient number have been got ready, the cut pieces are quickly heated to boiling in plenty of water, whereupon steam is turned off, and the fruit left to draw, covered over with a wooden lid, until soft enough, *i.e.* until the pieces no longer stick to the needle. When cool they are placed in 18° sugar, and bottled after concentration to 26°. One portion may be coloured red, as described for pears.

For stock jars, the blanched fruit is covered with 25° sugar, and sterilised 25–30 minutes on the water-bath.

Roseberries.

The large garden berries are freed from adherent thorns by rubbing them in a bag, and then cut off at the tips sufficiently low down to enable the kernels to be extracted with a suitable wire hook. The fruit is slowly blanched in water, containing

a little burnt alum, until it feels soft, and is then placed in cold 18° sugar containing a little fruit-red. The next day it is concentrated to 26°, and then bottled with fresh sugar.

The wild berries are preserved with the kernels in, for mixed fruits, the tips being cut off far enough to make an opening. The fruit is scalded in boiling water, and placed in quart jars with 25° sugar, being then sterilised for 25–30 minutes on a water-bath.

Skinned Plums.

The only suitable variety is the large late plum, the summer kinds being useless for bottling. The fruit must be still hard, though with a good yellow flesh. The skins are removed by dropping a few plums at a time into boiling water, boiling them until the skin cracks, and then placing them quickly in cold water, whereupon the skins come away easily. The skinned fruit is placed in shallow pans with fresh water, containing a little neutralin, this enabling the yellow colour to be retained. The pan is slowly heated over the fire, with constant stirring, until the plums begin to float, whereupon they are removed and cooled with plenty of water.

They are left overnight in 20° sugar, which is concentrated to 24° next day, the fruit being heated at the same time. When cold, bottle with fresh 25° sugar.

Plums bottled in their skins are best preserved first in gallon jars. The plums are pricked in a

machine, scalded for a moment in boiling water, and covered with 34° sugar, then sterilised 30 minutes on a water-bath. In this way the shape and appearance of the fruit are preserved.

Raspberries.

For transparent preserve, dry, fine garden raspberries are taken and treated in the same way as strawberries. Wild raspberries for bottling are placed in a shallow enamelled pan, suffused with boiling 28° sugar, and left to stand. Later on the whole is carefully heated, and bottled when cold.

Blackberries.

The treatment is the same as for wild raspberries.

Bilberries.

The berries are picked, washed, and put into sieves. Three parts of sugar are boiled until a skin forms, then mixed with 7 parts of fruit, and carefully raised to boiling, and skimmed. When cold the fruit is ladled into bottles and sterilised on the water-bath.

Cranberries.

Large selected berries for bottling are heated to boiling in water, then taken out at once and placed in red-stained sugar of 20° strength. Next day the sugar is concentrated to 24°, the berries

and sugar are heated in shallow pans, and bottled when cold.

For compote in bottles or jars, 50 lb. of sugar should be used for every 100 lb. of fruit. The sugar is dissolved and boiled to strong syrup; the picked, washed berries being added and carefully stirred while the mass is being slowly raised to boiling. The whole is then skimmed, and the operation repeated several times, boiling being continued until a test sample thickens to a jelly. The mass is then cooled a little and packed whilst still hot.

Figs.

These may be kept fresh, but can also be preserved, first in gallon jars by pricking the fruit and blanching it with plenty of water (containing neutralin) until it no longer sticks to the needle. It is then placed in the jars, covered with 34° sugar, and sterilised for ½ an hour on the water-bath. Treated in this way, the figs preserve their fine yellow colour, and are better fitted for bottling.

If the figs have been stored in brine they must first be carefully drained. When desired to remain yellow and not acquire a green colour, they must be blanched in a properly tinned or enamelled pan. Salt figs take nearly 2 hours to soften properly, which done, they are cooled and laid in sugar of 22° strength, afterwards increased to 25°, and finally to 28°, the figs being heated with the sugar at the finishing stage.

Melons.

The only kinds suitable for preserving are the network melon and the Cantaloupe. The proper stage of ripeness is reached when the fruit will give at the tip under the pressure of the fingers, otherwise the melons must be stored until this condition is attained. The fruit is cut into halves, the seeds taken out, and the flesh cut into slices, the skin being removed and the side next the core trimmed smooth.

The slices are placed overnight in water containing 50 per cent. of vinegar, which makes the flesh contract. Next day the melons are heated to boiling with the same water in large pans, then covered up and left to draw. When all the slices are clear and properly softened, they are cooled down, the rear sides are pricked with needles, and the slices laid in cold 29° sugar, concentrated next day to 22°, and finally to 25°, the fruit being then heated with the sugar. When cold, it is bottled with fresh sugar.

Apples.

Apples are rarely used in the form of compote, being generally stored in jars for subsequent mixing.

Only a few of the better sorts of apples are suitable for compote, and these are blanched (with an addition of neutralin), steeped overnight in 18° sugar, and packed next day with 22° sugar. They are peeled in a machine, cut into halves, and the cores removed.

Apples for storage in jars are treated with 30° sugar solution, and after being cooled in water, are placed in the jars at once, sugar being added, and the whole sterilised for ½ an hour on the water-bath.

Genoa Oranges, Green and Yellow.

The peeled fruit, bought in a pickled condition, is moistened and then blanched in a bright copper pan with plenty of soft water. The green fruit takes 2½ hours, the yellow 2 hours.

After cooling in plenty of running water, the fruit is pricked and placed in an 18° sugar solution, which is concentrated next day to 21°, and afterwards to 24°, at which stage the fruit is heated with the sugar. The concentration is increased to 26°, and next day to 28°, the fruit being heated this time also. When cold it is packed with fresh sugar.

The yellow oranges may also be coloured red by staining the first sugar with fruit-red.

Chestnuts.

The large Italian or French chestnuts are used, these being shelled, and steeped overnight in water containing neutralin.

Next day the chestnuts are placed in shallow wicker baskets, which are laid on a lath grating in a suitable pan, the grating being weighted down with stones. A few pounds of flour, stirred to a pap with water, are added to the blanching water.

The water is slowly raised to boiling, and left to draw for an hour. Meanwhile a solution of sugar (18°) is prepared and placed in a shallow copper or enamelled pan, the peeled chestnuts being added. (Enough hands should be employed to get through the peeling quickly.) Half a stick of vanilla is placed in each pan, and the sugar is concentrated by heating the pans on the water-bath. Next day the chestnuts may be packed, fresh vanilla sugar of 25° density being used.

Angelica.

The roots are sorted into thick, medium, and thin, the latter being bottled, whilst the thicker kinds are preserved in thick sugar as garnishing fruit.

The roots are slowly blanched in a copper pan, about 1½ hours being required. Just before the finish, a little copper sulphate is added to give the fine, bright colour. Then water, and treat in shallow pans like other fruit. Angelica in thickened sugar must contain at least 50° of syrup to prevent it from drying and becoming candied.

Mixed Fruit.

The preparation of the several fruits has already been described; but if a clear mixture be desired, no stained fruits must be used, since these always part with some of the colouring matter. Stoned cherries, coloured with new-red, may, however, be used, provided they are boiled up again with

white sugar. Large wild roseberries are well adapted for mixtures.

The various fruits are placed on suitable earthenware colanders, bottled, and covered with fresh sugar (25°).

Mixed fruits in arrack, cherry cordial, rum, etc., are prepared in the same way, the added sugar being mixed with 50 per cent. of the corresponding spirit. These preparations must not be heated after the bottles have been closed, but it will be sufficient to make the open bottles fairly hot, and then put the stoppers in.

Pineapple.

The usual way to bottle this fruit is to take one-third of hothouse pineapples and two-thirds of the West Indian fruit. The pineapples are quartered, and then cut in thin slices with a sharp knife. Each pound of slices requires 3 lb. of refined sugar carefully boiled to 32° density, the fruit being added and boiled up once, after which it is taken out and cooled. Next day the sugar is poured away, concentrated to 30°, strained, returned to the fruit, and the whole boiled up again. When cold, the fruit and sugar are bottled, and heated on the water-bath.

Plums in Vinegar.

The best way to prepare these for compote is to store the plums in sugar in gallon jars, as already described under plums.

For use, the plums are bottled, aromatic vinegar is poured in, and the whole heated as usual. The aromatic vinegar is prepared by setting 10 gallons of wine vinegar in a warm place, with 1 lb. of whole cinnamon, 1 lb. of pimento, and ½ lb. of cloves, for a month, and then pouring off and filtering the vinegar.

Cherries in Vinegar.

Prepared from preserved cherries in the same way as described for plums.

CANNED FRUIT.

Canned fruits are mostly blanched beforehand, though some kinds are packed raw. In the latter case, however, the fruit must be carefully washed to remove, not merely the dirt, but also any adherent fermentative organisms. For the same reason it is also essential to sterilise the raw fruit at a higher temperature, preferably in an autoclave.

On the other hand, fruit that has been blanched in water can be sufficiently sterilised on an open water-bath. The strength of sugar solution to be added varies with the kind of fruit, particulars being given in each of the following cases.

Gooseberries.

The gooseberries are blanched, as already described, well cooled, placed in tins, and covered with 22° sugar. The time required for sterilising 1½ pint tins is 20 minutes on the water-bath.

Strawberries, Uncooked.

The berries are picked to remove the stalks and all damaged specimens, then washed, and drained on hair sieves. They are next packed in the tins

and covered with dark, red-stained sugar (28°). Sterilising is done in the autoclave, 10 minutes at 220° F. being sufficient for 1½ pint tins.

Currants.

The carefully picked berries are lightly washed, warmed over a fire (but not boiled) in a shallow pan with 28° sugar, and packed into tins when cooled. Sterilise 1½ pint tins on a water-bath for 20 minutes.

Dark Cherries with the Stones in.

The picked cherries are heated in plenty of water until the stones are somewhat loosened, though the fruit should not burst. They are then quickly transferred to sieves, placed warm in the tins, and covered with 20° sugar. Sterilise on the water-bath as already mentioned.

Light Cherries with the Stones in.

The cherries must first be stained a uniform colour, the best dye being new-red. The cherries are heated slowly in the dissolved dye, and when the desired depth of colour is attained, are treated in the same way as dark cherries.

Stoned Cherries.

The cherries are stoned, then lightly blanched in a 10° solution of sugar, after which they are

laid in fresh sugar (density 20°), and when cold are placed in the tins, juice and all. Sterilise as above.

Mahaleb or Scented Cherries.

When tinned with the stones in, these cherries are blanched in water, the same as other cherries, the stoned fruit being blanched in dilute sugar. The sugar is stained a handsome red, and the tinned fruit is sterilised for 20 minutes on the water-bath.

Pears, Whole or in Halves.

The peeled and cored pears are blanched with a little neutralin, well cooled, packed in tins, and covered with 28° sugar. Sterilise 1½ pint tins for 20 minutes on the water-bath.

Apricots, cut into Halves.

Fine apricots of uniform ripeness are carefully wiped clean with cloths, cut into halves, and the stones removed. They are then laid closely together in the tins, without pressing, a few shelled kernels being placed on top, and covered with 30° sugar solution.

Sterilisation is performed in the autoclave for 8 minutes at 220° F., and the tins are cooled at once with plenty of running water to prevent bulging. The pouring in of the sugar must be quickly followed by the sterilising.

Apricots, Whole Fruit.

Fruit of uniform ripeness is freed from stalks, pricked with needles, and placed in dishes, being then partly blanched with hot water containing neutralin. It is then placed in the tins, covered with 28° sugar, and sterilised in the autoclave for 8 minutes at 220° F., or for 25 minutes on the water-bath.

Skinned Apricots.

The fruit for this purpose should be semi-ripe, but already yellow, so that it can be skinned by hand, either the whole fruit or when cut into halves. It is then carefully blanched, cooled, and placed in the tins, where it is covered with 25° sugar, and the tins are boiled for 20 minutes on the water-bath.

Whole fruit, in a suitable stage of ripeness, may also be skinned in the machine.

Small Yellow (Mirabelle) Plums.

If the fruit be yellow, but still hard, it is preferably pricked with needles, and heated in water until the skin easily cracks and the fruit rises to the top. It is then placed in the tins and covered with 28° sugar.

When riper fruit is taken it is packed raw, being first pricked, then washed thoroughly in cold water and dried with a cloth. The sugar in this case is of only 24° density, and sterilising is

performed in the autoclave for 10 minutes at 230° F. When finished, cool with plenty of running water until the lids are tight.

When the plums have been blanched beforehand, sterilising for 20 minutes on the water-bath will be sufficient.

Greengages.

The fruit is blanched as for bottling, but not quite so soft, then well watered, packed, covered with 25° sugar, and sterilised for 20 minutes on the water-bath.

Peaches, Whole or Halved.

The right sort to use is that in which the stones do not loosen. The fruit is blanched in water with a little neutralin, cooled, packed in the tins, and covered with 25° sugar, being then sterilised on the water-bath for 20 minutes.

Late Plums, Unstoned.

When the plums have been pricked in a machine, they are placed in a large quantity of water, in portions, quickly heated to boiling, and cooled at once before they burst. Next they are placed in the tins and covered with 24° sugar that has been stained a light red. Thinner sugar may also be used.

The best method of sterilising is for 10 minutes

at 230° F., followed by a thorough cooling. This treatment is essential to destroy the fermentative organisms and to prevent bulging tins. The fruit may also be tinned in an uncooked condition, but in such case must be brought direct from the tree to the works, and packed without delay.

Preserved Rhubarb.

All thick early sorts are suitable, the sticks being skinned, cut into lengths of about 2 inches, placed in earthenware dishes, strewn with plenty of sugar, and left overnight. Next day the whole is carefully heated, and the sticks placed in tins after cooling. The juice is concentrated to 20°, a little finely pared lemon peel being added and poured over the sticks, the whole being sterilised on the water-bath. Twenty minutes is enough for 1½ pint tins.

Bilberries.

The berries are carefully selected, washed, and put into the tins, where a 28–30° sugar solution is poured over them. Sugar that has already been used may be employed. Sterilise in the autoclave for 10 minutes at 230° F.

GLAZED AND CANDIED FRUITS.

The sugar used for preparing these preserves must indicate 38° by the saccharometer, in the finished condition, this being, moreover, the highest density that can be accurately measured.

Well-prepared syrup fruit should keep well for a year or more if stored in a cool place; but the preparation entails considerable experience in order to turn out a really perfect article.

Of course the quality and ripeness of the raw fruit has an important influence on the result.

Some kinds require to be sulphured in order to obtain a fine, pale colour, *e.g.* apricots, cherries, and pears in particular.

Blanching requires considerable care, each fruit needing to be blanched quite soft, to enable the sugar to penetrate easily and the fruit to retain its form intact. The treatment with sugar is the same as for bottled fruit, the 28° syrup being concentrated the next day to 32°, the fruit being heated up with it and then left to stand for 2 days. Then begins the treatment with strong syrup, the quantity used being about one-third that of the sugar juice. Almonds and pears rich in sugar

need rather more, in order to prevent crystallisation.

The sugar is concentrated to 35° by heating it over a coke fire, in small portions at a time, without any addition of sugar; and the syrup and fruit are added and boiled up together. Next day it is concentrated to 38°, more syrup being added, and the fruit heated up with it again. Whilst still hot, the mass is placed in dry jars or basins, covered with paper soaked in spirit, and tied up.

In all works of any size a room will be set apart for sulphuring, situated near a chimney or air shaft, and fitted with tightly closing doors. A trap door is provided between the room and the chimney for the escape of the vapours when the sulphuring is over.

The fruit to be sulphured is laid on wooden trays with lath bottoms, measuring about 40 by 20 inches, and placed one above another so as to leave a space of about an inch between. Wire is quite unsuitable. The fruit spread out in this manner (apricots in single layers) is placed in the room overnight, and the sulphur ignited. Apricots are incised at the tip with a knife, or the stone loosened a little by inserting a wire at the seat of the stalk. About 2 lb. of flowers of sulphur are placed in an iron vessel, mounted for safety on an iron or earthenware plate, the sulphur being ignited with a few lumps of glowing coke so as to set the whole mass on fire.

Next morning the vapours are allowed to escape, and the fruit is taken out and laid in water:

apricots in small vessels, cherries and pears in large tubs.

A point to be remembered is that sulphured fruit must never be packed in tins. Consequently also all soft fruits, obtained by blanching, for marmalades, must be packed in glass vessels, since they would turn black and spoil in tins.

Sulphured pears remain unaltered by paring, and cherries on stoning; which is a great advantage. Sulphured apricots never give rise to the objectionable brown specks in the sugar that are found in the case of unsulphured fruit, the colour remaining uniformly pale. Sulphured cherries take the red stain evenly, which never happens when sulphuring is omitted. New-red, however, is the only suitable dye, none of the others acting direct. Pears also should be coloured with this dye.

The light red mahaleb cherries are also sulphured and boiled for preserving in this manner, sulphuring being the only way to make them retain their plump, rounded shape.

Glazing Fruit.

The preparation of shiny, dry fruit, entails considerable experience and particular care in boiling the various kinds of fruit.

The sugar syrup must not be lower than 36° density, and the fruit in all cases must be left in this syrup for a month at least. If the concentration of the syrup recedes during the process, it must be restored to the proper strength.

For glazing, the fruit is first drained on a copper strainer, then boiled up again, in small quantities at a time, in a fresh 36° solution of sugar, the same sugar being used in each case. The fruit is taken out with large wire spoons, and placed to drain in wicker baskets. When enough has been prepared, glazing may be commenced.

For this purpose a 32° solution of (preferably refined) sugar is prepared, and about 2½ gallons of this are placed in the glazing pan, for treating 11–12 lb. of fruit.

The sugar is boiled over a bright coke fire, the edges being washed clean, until a crust forms, 2 tablespoons of syrup being added. When the sugar is of the proper strength, the fruit is added, and the whole allowed to boil up, the pan being then taken off the fire and left for several minutes.

Owing to the strength of the sugar, only a small portion can be worked at a time, a portion of the fruit being collected on one side of the pan by means of a light, flat, perforated copper spoon, about 8 inches long and 6 inches broad, with a suitable handle, and the sugar worked with a small spattle, the fruit being then laid on a wire grating for the surplus sugar to drain into a vessel underneath. This operation is repeated with fresh portions of fruit until the whole has been dealt with.

It is impossible for the operator to work fast enough to treat the whole at once. The necessary skill can be acquired in a few days, and 2–3 girls are required for each pan, the fruit being taken by

means of flexible wire tongs and laid so that each fruit is separate from the rest.

The only way to obtain a shiny and durable glazing is by using strong sugar.

When the fruit on the gratings is cold, it is transferred on to suitable trays, and can be packed after a short interval.

Candied Fruit.

To prepare candied fruit, a number of shallow candy pans are required and suitable wire gauze or perforated sheet metal, to be placed one at the bottom and the other on top. Large fruit is arranged in a single layer, but smaller fruit, like cherries, in two to three layers.

When the fruit has drained it is washed in a fresh sugar solution (30°) by the aid of heat, and laid on wooden trays or wire gratings in the warm drying-room. Next day it is turned over, so that both sides can get dry. When properly dry, which condition will be reached after 2 days, the fruit is candied.

A suitable quantity of sugar is dissolved in the requisite amount of water, raised to boiling, and then gradually diluted to 28°, with frequent skimming, after which it is concentrated to 34–34½°, according as large or small crystals are desired. The finished candy is transferred to a suitable pan and set on one side. It is important that the finished sugar should be poured over the fruit 3 hours later, before it has cooled so far that

a solid crust is formed. Thus, if the candy is finished at 4 o'clock, it must be poured about 7. The candy pans are left overnight in the warm drying-room and emptied next morning.

Blue Plums.

This highly appreciated preserve can be easily made on a large scale, especially when a cheap supply of plums is available, any good sort being suitable.

The fruit should be at such a stage of ripeness that, while the flesh is still firm, the skin has begun to wrinkle near the stalk. It is better to be over-ripe than the reverse. The stones are extracted by a wire instrument, inserted at the stalk end and pushing the stone out through the tip, the fruit being meanwhile held firmly in the left hand to prevent bursting. When the quantity is small the plums are laid in a flat pan, hot, previously used sugar (24°) being poured in, and pounded sugar strewn over the top. The pans are left in the drying-room until the next day, the fruit parting with its juice and absorbing sugar. Next day boil over a fire, with frequent shaking, and skim. When cold proceed with concentration, by stages of 4°, without adding syrup, fruit syrup being generally used with this fruit.

Large parcels are treated as follows: The stoned plums are placed in large tubs or pans, covered with a wooden grating, and weighted with a stone. Boiling fruit sugar (24°) is then poured

over, and the whole left to stand. Next day the fruit is transferred to small pans, the sugar juice being concentrated to 28° and poured hot over the fruit. After a few hours the fruit and sugar are boiled together and left to cool. On the third day the sugar is concentrated to 34°, and on the fourth day to 38°, the whole when cold being stored in large casks in a cool place.

In the finishing process the plums are well drained, the small ones being used for stuffing, by the aid of a suitable piece of wood. The plums being laid on a suitable wire grating are dipped carefully five to six times in water that is just boiling, in order to wash off the adherent syrup. The residual drops of water are blown off by means of a bellows, and the grating is taken into the drying-room, which must not be hotter than 85° F. After 24–36 hours the plums will have acquired the desired bluish "bloom," and are then ready for packing. If the temperature of the drying-room is higher the syrup sweats out of the plums, and the latter do not turn blue; the defect, however, can be remedied by rewashing.

Glazed Chestnuts.

The preparation of this article entails great care and long experience to turn out a fine, light-coloured, and tender fruit. The best chestnuts to use are the large Italian or French kinds, rather flat than round. After removing the brown outer shell the chestnuts are laid on sulphuring trays

and sulphured for 2 hours, after which they are placed until the next day in fresh water, which is renewed several times.

Blanching is performed in small, shallow wicker baskets, made of peeled withes, and capable of holding 5–7 lb. of chestnuts. These baskets are laid on a wooden grating in a large shallow pan, the intermediate spaces being weighted with stones. The grating, however, must be merely pegged, and not nailed, contact with iron spoiling the colour of the fruit. Moreover, all the vessels used should be of copper or enamel.

Three measures of wheaten flour are stirred to a pap with 150 of water, and sufficient of this mixture is poured over the chestnuts to cover them. The water is gradually raised to the boil, or rather to 194° F., which temperature should not be exceeded, and kept thereat for 2 hours, with frequent skimming, and replacing the water lost by evaporation. The whole time of heating should be at least 3 hours, preferably longer; but a little experience will soon teach what is the correct period. As soon as the chestnuts are found to be soft enough, the basket is taken out and placed in hot water, this being essential for skinning. The skinned nuts are placed in a shallow pan containing sugar solution (15°) and vanilla.

When a few pans are ready, the sugar is concentrated, preferably on a large water-bath holding six to eight pans, and heated by steam. The water being kept on the boil, the operation will be completed in half a day, the loss by evaporation being replaced

all the time by sugar solution. Next day this sugar, which has turned a dark colour, is poured off, and fresh 32° sugar, containing one-third of syrup, is added. On the third day the chestnuts are either placed in gallon storage jars and covered with 32° syrup, or else are bottled direct. However, to avoid risk of breakage, it is preferable to defer the bottling until the chestnuts have stood for some time in syrup, and to preserve a stock for the following season, so as to begin with a good article.

The glazing is performed in the same manner as with other fruits, but in smaller quantities at a time, vanilla being added to the glaze.

Glazed Pineapple Slices.

Since these should be of a fine pale yellow colour, the fruit must not be boiled much with the sugar. Tinned pineapple is cut into slices, with a sharp, thin-bladed knife, on a suitable board, fitted with a $\frac{1}{2}$-inch guide strip on right and left, the slices being boiled $1\frac{1}{2}$ hours with pure water in a bright copper pan. Meanwhile best refined sugar is dissolved to a 20° solution, in which, whilst still hot, the hot boiled slices are laid and covered up with paper. At the start a comparatively small amount of sugar is used so that the slices will not float, since in these circumstances they will absorb the sugar better.

Next day the slices are arranged in a circle, the sugar being concentrated to 24° and poured over

them hot. The next time the concentration is increased to 28° with added sugar; then to 32°, each time being poured hot over the fruit; and finally to 36°, with addition of a little syrup, the slices being carefully heated up with the sugar, and then turned into flat pans to cool before being put into the jars. The glazing is performed in the manner already described, except that in this case the slices are merely drained. Pineapple cubes, or "chunks," are treated in just the same way; the commercial "sticks" are best for this purpose, being almost completely free from "eyes."

Crystallised Strawberries.

Firm-fleshed strawberries of medium size are boiled as described under strawberries, and allowed to drain on a sieve in the drying-room. The still moist fruit is then rolled in fine, red-stained crystal sugar, then laid singly on boards covered to a depth of ½ an inch with the same sugar, and put in the drying-room. Next day they are turned over, worked a little, and left to dry for another day, whereupon they are ready for packing.

Mustarda.

There are two classes of this preserve, one sweeter than the other. The former is prepared from sweetened fruit, the other from stewed fruit.

The sweet kind will keep unaltered for a considerable time, even in open jars; but the other

must be sterilised on the water-bath, and is always sold in tins.

The various fruits are packed as for mixed fruit, and the mixture is covered with a mustard sauce, prepared as follows: 48½ lb. of brown mustard are ground three times, and stirred up with 9¾ gallons of white wine, 1 lb. of salt, and ½ lb. of ground capsicum. This mixture is left to stand all night and put through the machine next day; then mixed with 17½ gallons of boiling hot 28° sugar, the whole being stirred and afterwards skimmed. This mixture will keep for a long time, but should be boiled up again before use.

MARMALADES, JAMS, AND FRUIT JUICES.

The preparation of genuine marmalades and juices alone is dealt with in this section, no mention being made of those fortified with gelatine, agar-agar, etc. Of course, as in all large works, the various fruit pulps are stored in jars or bottles, and only used when the marmalade is to be sent out.

This method offers many advantages. In the first place the sugar is not worked up until the marmalade is to be sent out, thus saving a good deal of expense; and furthermore, all kinds of pulp are ready in autumn for the preparation of the various mixtures required.

It should also be mentioned that fruit pulp will keep best when poured boiling hot into glass jars that have been rinsed out with boiling water, the jars being filled to the top and closed at once. Sterilising in tins alters the colour, and cannot be practised for any berry fruit, the tin spoiling the colour.

Lower grade fruit pulp, and also apricot pulp—large quantities of which should be stocked—may, however, be stored in tins holding up to ½ cwt., in the following manner:—

The tins, which are soldered top and bottom,

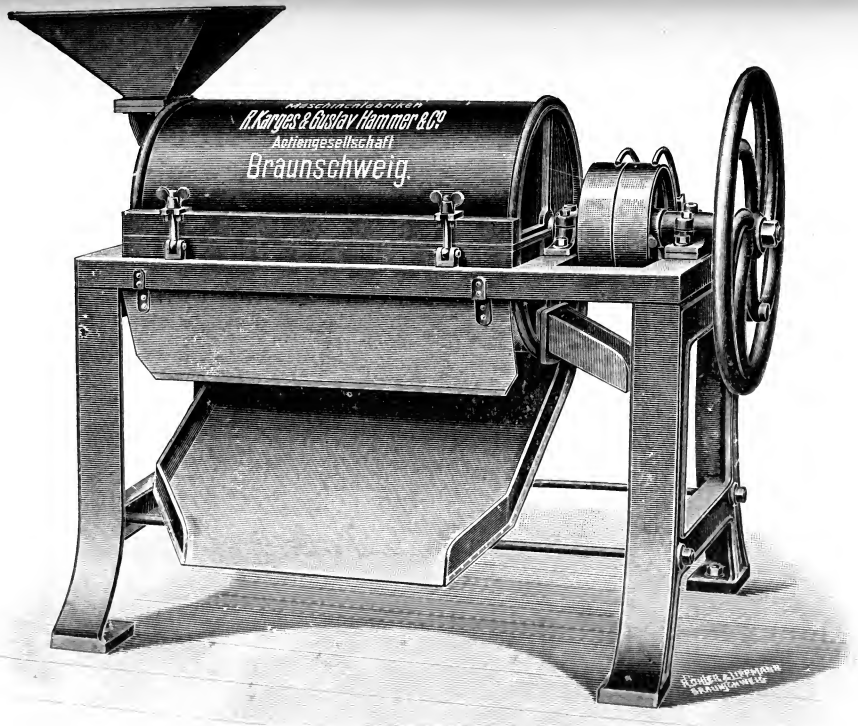
Maschinenfabriken
R. Garges & Gustav Hammer & Co.
Actiengesellschaft
Braunschweig.

Fig 3.

have a 2-inch hole in the lid, and are stood in a vessel of boiling water. When the fruit pulp is boiling hot the tins are taken out in succession and filled up to the top, the lids being soldered on at once. This done, the tins are stood on their heads, so that the small amount of imprisoned air is compelled to rise through the boiling hot pulp, and is thus rendered innocuous. This method is perfectly reliable, and enables large quantities of pulp to be got ready for storage in a short time.

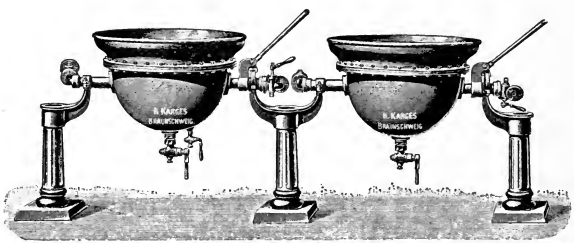

Fig. 4.

The pulp may be put through a hand mill, or through one of larger size, operated by power, similar to that illustrated in Fig. 3.

At the present time it is the practice to use a larger quantity of sugar than formerly—the average then being only two-thirds to three-fourths per lb.—in order to obtain transparent marmalades of good keeping properties. The English practice in jam-making is to use equal weights of sugar and fruit, this developing the flavour of the fruit better; and the fruit is not pulped so fine as on the Continent,

being preferably torn so that the flesh is more apparent, and imparts a characteristic appearance. In the case of plums, peaches, apricots, etc., a few stones are left in the mass to improve the fineness of flavour.

In the following description of the various marmalades it is assumed that the fruit is steamed in pans holding about ¾ cwt. (Fig. 4), this enabling the steaming to be reduced to about 15–20 minutes—an important point in the preparation of pale marmalades.

Experience alone will teach when the fruit is done; and in case of uncertainty a few samples should be taken and spread on a plate to cool. The finished marmalade should be cooled by stirring in shallow pans, so as to prevent scorching; but it must be filled into the pots whilst still hot.

Strawberry Marmalade.

Strawberry pulp, 2 parts; apple pulp, 1 part; sugar, 3 parts.

Raspberry Marmalade.

Raspberry pulp, 2 parts; currant pulp, 1 part; apple pulp, 1 part; sugar, 4 parts.

Currant Marmalade.

Currant pulp, 2 parts; apple pulp, 1 part; sugar, 3 parts.

Scented Cherry Marmalade.

Scented cherry pulp, 2 parts; apple pulp, 1 part; currant pulp, 1 part; sugar, 4 parts.

Cherry Marmalade.

Cherry pulp, 2 parts; apple pulp, 1 part; sugar, 3 parts.

Greengage Marmalade.

Greengage pulp, 2 parts; apple pulp, 1 part; sugar, 3 parts.

Late Plum Marmalade.

Plum pulp, 3 parts; sugar, 3 parts.

Peach Marmalade.

Peach pulp, 2 parts; apple pulp, 1 part; sugar, 3 parts.

Roseberry Marmalade.

Roseberry pulp, 2 parts; apple pulp, 1 part; sugar, 3 parts.

Apricot Marmalade (Best).

Apricot pulp, 3 parts; sugar, 3 parts. The sugar is boiled separately until it begins to ball, and then mixed with the pulp and boiled to a finish.

Apricot Marmalade (Second Quality).

Apricot pulp, 3 parts; apple pulp, 1 part; sugar 4 parts.

Steeped Plums.

One hundred parts of stoned, ripe late plums are mixed with fruit sugar drained from thickened sugar preserves, and boiled to proper consistency with a little whole cinnamon and a few cloves.

Apple Marmalade.

Apple pulp, 2 parts; sugar, 1 part.

English Orange Marmalade.

Bitter oranges are used. The fruit is cut into halves, without injuring the core, thrown into boiling water, a few at a time, boiled for several minutes, and then quickly cooled, whereupon the flesh can be easily squeezed away from the rind.

The flesh is heated to boiling with a sufficient quantity of water and pulped in a mill, the rind being quartered and cut into thin slices in a special machine. The slices are blanched until soft, and laid aside in a sieve. Next, 30 parts of the pulp and 10 of the slices are weighed out and mixed; and in the meantime 54 parts of refined sugar and 6 of syrup are dissolved and heated till they ball, whereupon the pulp and rind are added and the whole boiled to a finish.

The marmalade should have a golden yellow colour and be perfectly clear, and is left in the natural condition. It is filled hot into the pots and fastened down when cold.

Another kind can be made by adding a quantity of apple pulp equal to that of the orange rind taken.

Tomato Marmalade.

Six parts by weight of ripe fruit are thrown into hot water, taken out again quickly and cooled, the skins being then easily peeled off. The fruit is next cut into halves, and the seeds carefully extracted with a suitable instrument. Four parts of sugar are dissolved in a little water, mixed with the fruit, a piece of vanilla, and fresh lemon peel, and boiled with constant stirring till the mass sets to a jelly. The flavouring ingredients are then taken out. This preserve is held in great favour in Upper Italy.

Apricot Jam.

Good ripe fruit is stoned, and boiled with a little water, but not pulped. Equal parts of the fruit and water are boiled to the right consistency, and a few apricot kernels, previously scalded and skinned, are added to the mass.

Gooseberry Jam.

Nearly ripe, but still hard, gooseberries are cut off at the tips, boiled in a little water and put

through the pulper. The pulp is mixed with its own weight of chopped berries and boiled with an equal amount of sugar. The jam is stained a light red.

Red Currant Jam.

The fruit is divided into two halves, one being boiled with a little water and pulped, the other washed and added. The mixture is boiled to a finish with its own weight of sugar, which has been boiled to balling point.

Raspberry Jam.

Fresh garden raspberries are divided into two halves, the one being pulped, and the other merely crushed. Two parts of this mixture are added to one of red currant pulp, and boiled to a finish with an equal weight of sugar.

Strawberry Jam.

In making this jam, one-third of pulped gooseberries is added, the agreeably acid flavour of the latter developing the taste of the strawberries. The latter are merely crushed, added to the gooseberry pulp, and the whole boiled with an equal weight of sugar.

Cherry Jam.

Sweet dark cherries are stoned in a special machine, no damage being done if the fruit is

torn more than is usually desirable in stoning. Meanwhile twice the quantity of whole cherries are boiled with a little water and put through a coarse pulper (Fig. 5), the sieve of which has a mesh just fine enough to keep back the stones.

The pulp is then mixed with the stoned cherries, and boiled with a quantity of sugar equal to the weight of the fruit.

Morella Cherry Jam.

Both the early and late kinds are suitable; and the method of preparation and quantity of sugar are the same as for cherry jam. Care must, however, be taken to boil all the prepared fruit the same day, this being the only way to obtain a jam that will jelly properly and have a fine flavour.

Bilberry Jam.

The berries are picked over, washed clean, and crushed. The fruit is boiled with half its weight of water until the proper consistency is reached.

Blackberry Jam.

The blackberries are picked over, washed and crushed, after which they are mixed with one-third of gooseberry pulp, and boiled to a finish with an amount of sugar equal to the whole weight of fruit.

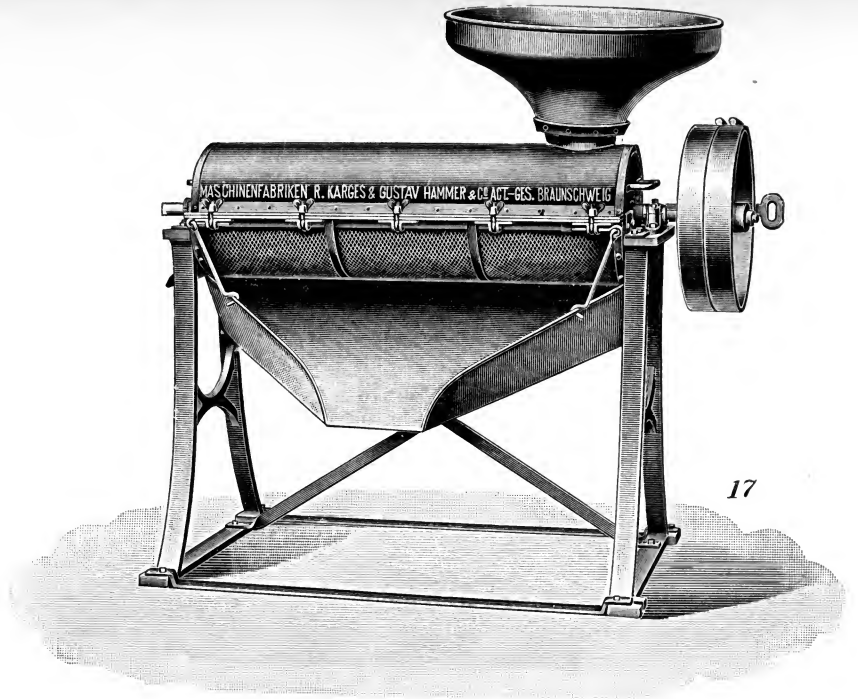
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Fig. 5.

Strawberry and Gooseberry Jam.

This mixture has an excellent flavour, and is prepared from equal parts of the two fruits. One half of the gooseberries are pulped, the other chopped, and the strawberries merely crushed. Equal parts of sugar and fruit are used.

Plum Jam.

Good ripe late plums are freed from stalks and pulped in the coarse pulper after being heated to boiling with a little water. One-third of the whole, however, is merely stoned, leaving the skins on. A few of the kernels are added—enough to make three to four in each pound pot. These kernels impart the agreeable flavour of bitter almonds to the jam. The proportion of sugar is the same as in other jams, namely, equal to that of the fruit.

Raspberry and Red Currant Jam.

This tasty mixture is prepared from equal quantities of the two fruits, the currants being left whole and the raspberries crushed. To prevent an excess of pips half of each quantity is pulped and sifted. Equal parts of fruit and sugar are mixed, and boiled quickly to a finish after all is dissolved.

Pineapple Jam.

With this jam an addition of the finest apple pulp is essential to prevent it getting tough, and to

increase the binding effect. Fresh pineapples are most suitable, but a portion may also be replaced by the tinned fruit.

The skin and eyes are removed and the fruit sliced, and afterwards passed through the coarse sieve of a meat-chopping machine. The resulting pulp is mixed with an equal weight of sugar, and boiled down sufficiently, with stirring. One part of best white apple pulp, from sourish apples, is taken to three of pineapple pulp.

Meanwhile the apple pulp, which contains the juice, is boiled with two-thirds of its weight of sugar until it jellies, and this is stirred into the pineapple pulp, the whole being then put into the pots.

Five to ten per cent. of syrup may be added if considered advisable, but the jam will keep good for years, without crystallising, provided the work has been carefully done and the sugar dissolved slowly, the latter being preferably boiled by itself beforehand.

FRUIT JELLIES.

The only kinds of jelly that will be described here are those made from the natural juices of fruit and sugar.

The preparation of the fruit juices is an important preliminary, and their storage in jars. Apples and quinces are cut into six to eight pieces, without peeling, and placed in a pan with just enough water to cover the fruit. They are gradually raised to the boil without stirring, and are left to draw, covered up, until the slices are sufficiently soft, whereupon they are transferred to a hair sieve to allow the juice to drain. The juice is placed in deep vessels overnight, and is next day carefully decanted from the sediment, heated to boiling and poured hot into glass jars, which are then covered up at once.

Berries, such as currants, raspberries, strawberries, cranberries, and blackberries, are also boiled with a small quantity of water in bright copper pans, transferred to sieves, and the juice sterilised as above.

The residue of the fruit may be pulped in the machine and used for mixed marmalade or jam. An addition of good apple juice is advisable in all fruit jellies, but should be prepared from good

apples with an acid flavour. To obtain a clear juice without filtering, the following method can be employed:—

The juice, carefully freed from the sediment, is mixed with half its weight of best sugar, slowly heated to boiling, skimmed and filtered through a flannel bag, so as to keep back the particles of dirt present in the sugar. The filtered juice is quickly boiled up again, and as soon as a sample shows that the jellying stage is reached, is rapidly cooled with cold water, the steam being turned off and the juice skimmed. This operation is once or twice repeated, and as soon as a sample, placed in a glass, shows that the juice is clarified, boiling is continued to a finish, and the juice is put at once into the previously warmed glasses. The proper consistency is attained when the juice drops in patches from the upturned spoon, and when these patches, placed in a glass with cold water, fall to the bottom unchanged, without dissolving. The proper degree will be learned with a little practice. Should the jelly be boiled beyond this stage it will scorch and then refuse to set at all.

Apple Jelly.

Apple juice, 2 parts; sugar, 1 part; is usually left the natural colour, but may also be stained red.

Quince Jelly.

Quince juice, 2 parts; apple juice, 1 part; sugar, $1\frac{1}{2}$ parts.

Currant Jelly.

Currant juice, 2 parts; apple juice, 1 part; sugar, $1\frac{1}{2}$ parts.

Raspberry Jelly.

Raspberry juice, 1 part; currant juice, 1 part; sugar, 1 part.

Strawberry Jelly.

Strawberry juice, 1 part; currant juice, 1 part; apple juice, 1 part; sugar, $1\frac{1}{2}$ parts. The juice left over in making wild-strawberry compote is highly suitable.

Cranberry Jelly

Cranberry juice, 1 part; apple juice, 1 part; sugar, 1 part.

Blackberry Jelly.

Blackberry juice, 1 part; apple juice, 1 part; sugar, 1 part.

Apricot Jelly.

Apricot juice, 1 part; apple juice, 1 part; sugar, 1 part.

Peach Jelly.

Peach juice, 1 part; apple juice, 1 part; sugar, 1 part. The sweet juice formed when the fruit is kept in storage jars can be advantageously worked up into peach and apricot jelly; but in such case only

25 per cent. of sugar should be used, instead of 50 per cent., the juice already containing sugar. The added apple juice of course receives 50 per cent. of sugar.

Raspberry Juice.

Fresh wild raspberries are mixed with 5 per cent. of sugar, and left to ferment in suitable vessels, tubs wider at the bottom than the top being the best. The contents are stirred several times a day.

According to the temperature of the room, fermentation will be over in 6–8 days; and the must has then to be pressed quickly to prevent the alcoholic fermentation from proceeding to acetic fermentation.

The pressed juice must be heated to 175° F. in large copper pans, thus arresting fermentation, and the still hot juice filled into 10 gallon wickered flasks, closed by plugs of cotton wool steeped in salicylic acid. Stored in a cool place, the juice will keep unaltered for a long time, and clarifies of itself. For use it is decanted carefully from the sediment.

When the crude juice is stored in larger quantities it is treated with 15 per cent. of spirit, and placed in perfectly clean casks, which are kept full to the bung. In this case, however, the juice loses its colour in time, which does not occur when kept in the flasks.

To prepare raspberry syrup, 100 parts by weight

of the crude juice are put into a suitable pan with 180 parts of best sugar and slowly heated to boiling, with stirring, the steam being turned off as soon as the juice begins to froth up. As soon as the froth has subsided it is removed, the edges wiped round, and the juice heated to boiling again, and skimmed.

The juice is next strained through flannel. It will measure 30–31° on the saccharometer scale, and will keep for a long time.

Strawberry Juice.

The following method is adopted for obtaining an aromatic product:—

Small aromatic varieties, preferably mixed with one-third of wild strawberries are placed, with an equal weight of sugar, in suitable earthenware basins, and kept in a cool place, being repeatedly stirred.

On the following day the whole mass is shaken out on to large cloths to enable the juice to drain away clear. This juice is then heated carefully to 158° F., and poured, whilst hot, into larger or smaller glass jars, which are closed and sterilised for 20–30 minutes on the water-bath. The residual strawberries are used up in making cheap jams.

Cherry Juice.

Cherries for juice-making must first be passed through a fruit mill with adjustable wooden or stone rollers, in order to crush the whole of the

fruit. It is also advisable to crush a portion of the stones as well.

The resulting pulp is left 24–36 hours in suitable tubs before pressing. After pressing, the juice is left for awhile, then drawn off, treated with 16 per cent. of spirit, and placed in clean casks, which are kept full to the bung.

Lemon Syrup.

Sound ripe lemons are pressed, and the juice strained on a hair sieve; then placed overnight in deep glass vessels, carefully poured into 10 gallon glass jars next day, heated on the water-bath, and closed up at once.

To prepare syrup, 66 lb. of refined sugar are dissolved to a strong solution in water, mixed with 10 gallons of lemon juice, and concentrated to 30°. When the syrup has cooled down a little, some lemon spirit is added, this having been prepared by digesting finely pared lemon peel with fine spirit in a glass bottle for several days.

Orange Syrup.

The crude juice is prepared in the same manner as lemon juice. For making the syrup, 66 lb. of refined sugar are taken to 20 gallons of orange juice and a suitable quantity of water, the whole being dissolved and treated with $1\frac{1}{2}$ pints of lemon spirit. After concentrating to 30°, orange spirit (prepared from finely pared orange peel) is added.

Pineapple Juice.

Hothouse pineapples are peeled, cut up fine, and heated to very near boiling in 32° sugar (3 lb. to 1 lb. of pineapple). After a short time the resulting syrup—which should measure 30°—is strained through flannel and filled into bottles.

The residual pineapple slices can be extracted for second-quality juice, or used up in making pineapple marmalade.

FRUIT PULP FOR ICES.

Only the best and freshest fruit should be used in making pulp for this purpose, and the heating process should be performed as quickly as possible.

In the case of berried fruits, fresh, thoroughly ripe berries should be pulped, mixed with 10 per cent. of refined sugar, raised to boiling-point, and immediately poured into bottles which are hermetically sealed and sterilised like bottled fruit. The bottles should have been rinsed out with nearly boiling water just before use.

With a little experience on the part of the operator the sterilising process may be omitted, but everything must be boiling hot, and the closed bottles must be stood on their heads so as to compel the small amount of imprisoned air to rise through the boiling mass and thus be rendered harmless.

For stone-fruit pulp, the fruit is heated to boiling with a little water, then pulped in the machine and packed as above.

For pineapple pulp the fresh fruit is necessary. The fruit is peeled, the eyes removed, and the rest cut into chunks, which are put through the coarse plate of a mincing machine, then pulped fine, mixed with 10 per cent. of sugar, and packed as above.

CITRON PEEL AND ORANGE PEEL.

The citron tree is indigenous to Sicily, Corsica, and certain of the Grecian islands.

Orange peel is made from the rind of the bitter orange, another kind being made from sweet oranges. The latter can be bought, ready separated from the flesh, in Trieste and Messina, whilst the latter ports, Genoa and Leghorn, are the chief centres of the citron trade.

Both fruits are gathered in our autumn and winter seasons, citron peel being often ready for sending out in December, whilst orange rinds come on the market up to April.

Citron peel is of two classes, according as it is separated from the flesh or not. The former kind is also known as table citron.

The best, and usually dearest sort, comes from Corsica; the Sicilian fruit is termed diamond citron; and both these are used for preserving.

To obtain a peel that is rich in sugar, tender and yet firm and transparent, it is necessary to follow the Italian practice of working with cold sugar, as described below.

On opening the casks the brine is drawn off and replaced by fresh water, which is changed

several times. On the following day the fruit is placed in bright copper pans with plenty of water, and raised to boiling. After 2 hours' continuous boiling the fruit is sufficiently blanched, the proper stage being reached when the core loosens easily on the fruit being placed in cold water.

The fruit is then placed in cold water and the cores extracted by women or girls, preferably by hand. The cleaned fruit is left in cold water till the next day to draw out all the salt.

A cool room, preferably a cellar, is best for preserving; and it should be close to the boiling-house so that the sugar solution can be sent down through a sheet metal pipe, thus economising time and material.

The preserving room is fitted with strong wooden chests measuring 60 by 28 by 24 inches, lined with tinned sheet copper and fitted with a draw-off cock at the bottom. These chests are mounted on a suitable foundation.

One corner of each chest is fitted with a perforated metal pipe in which a pump, like those used for petroleum barrels, can be placed.

The citron fruit is laid on edge in the chests, but not packed too tightly; then covered with a grating of lath weighted with clean stones, and a cold 10° solution of sugar is poured in. Every day the weak sugar solution is pumped out and replaced by one 5° stronger.

The first sugar is usually allowed to run to

waste, having extracted salt from the fruit and being poor in sugar.

Of course the sugar solution removed by pumping is used over again; but since a considerable surplus of sugar solution will accumulate in time it is advisible to regulate the work in such a manner that a fresh quantity of fruit is blanched every day, the weaker sugar solutions being used up for this purpose.

As already mentioned, the sugar solution is run in cold, this being continued till the density reaches 35°. Under this treatment a slight fermentation, revealed by the gradual ascent of bubbles of gas, begins when the density is about 25°. This fermentation is necessary to open the pores of the fruit and facilitate the penetration of the sugar, this being the only way to obtain a product that will remain soft for any length of time. Should the fermentation be too powerful at 30°, it is advisable to boil the fruit and sugar up together, return to the chest, and continue the treatment with hot sugar. The last two charges should contain one-third of syrup, so that the final sugar has the density 40°.

The fruit should remain in this sugar for at least 6 weeks before it is glazed.

For the glazing process the fruit is taken out of the sugar, boiled up with fresh 30° sugar, and placed overnight in suitable vessels. Next day it is laid on a grating and set in the drying-room for 2 days, the glazing being effected in the

same manner as already described in the case of fruit.

For table citron peel, the cored fruit is cooled, and peeled fairly thick by hand in cold water, and then treated as above. To obtain a brilliant white product it is advisable to sulphur the peeled fruit all night on wooden racks, all contact with iron being carefully avoided.

The peel may also be cut up into pieces the size of orange peel, or may be preserved whole and sold to gingerbread makers.

Orange peel is always made by the hot process in small vessels holding about $\frac{3}{4}$–1 cwt.

The peel is blanched for $1\frac{1}{2}$–2 hours, then cooled and trimmed up to remove any residual flesh. This can be done before the peel is laid in the preserving vessel.

The peel is arranged in circles, but not very tightly, so that the sugar can penetrate to all parts. The first sugar should have the density 15°, the subsequent charges being 5° stronger every time. The fruit and sugar are finally boiled up together, and when cold are laid in the storage boxes in rings. Glazing is performed in the same manner as for citron, after the peel has been dried in the drying-room.

Orange Peel.

This peel is mostly to be bought with the flesh already removed, but can also be obtained with the flesh in, the oranges being merely halved. In this

condition about one-third will have to be allowed for waste.

The fruit is drained, then rinsed with plenty of water to remove impurities and fibres, and blanched for 2–2½ hours in a bright copper pan. When cooled, it is placed in wooden tubs holding about 2 cwt. each, and is covered with hot 15° sugar and weighted down. Next day the sugar is run off and not used again, its place being taken by a hot 20° solution, and the third day by one of 30° strength.

After another 24 hours the sugar drawn off is mixed with enough sugar to increase the strength to 35°, this being added to the peel and well boiled up, so that the whole has a clear appearance.

The cooled peel is drained, put into a storage cask, and covered with the sugar, which has meanwhile been concentrated to 38°.

For glazing, the drained peel is boiled in 36° sugar and placed in suitable wicker baskets, being then glazed as already described for fruit.

Candying is performed in the same manner as for candied fruit, *i.e.* as warm as possible, a certain amount of experience being necessary in order to obtain a product of good appearance and keeping properties.

Neutralin.

Eleven lb. of sodium sulphite are dissolved in 3¼ gallons of hot water, and the solution is stored in glass bottles.

This solution is the best adjunct to the blanching water in the case of any fruit that is desired to remain pale in colour. The quantity used is about one-tenth per cent. of the water employed.

PART II.

PRESERVED VEGETABLES.

PRESERVED VEGETABLES.

General Remarks.

In addition to the provision of the raw materials, the water question plays an important part.

As a rule, any tap—or other drinking water fit for that purpose, will also be suitable for preserving vegetables, provided it be free from any large quantity of iron and entirely free from ammonia. Traces of the latter are not prohibitory, and in all cases a trial should be made to see whether the water will really do, since the author has often found practice superior to theory in this connection.

Owing to the large consumption of water at intervals during the vegetable season, it is advisable to provide a large tank, even where water is laid on, in order to have a sufficient supply. This tank may be of strong timber, lined with thin, tinned copper, and is mounted either in the boiling-house or near the cooler. The best situation is in the roof, where it is supported on iron girders let into the walls, or it may be placed in a room over the boiling-house.

This tank, which is filled from the main, is fitted with a $1\frac{1}{2}$ inch draw-off pipe and tap leading

to the cooler, so that plenty of water can be obtained at any time without delay.

The blanched vegetables must in all cases be cooled with a large volume of water, renewed several times, in order to preserve the flavour. Rinsing and draining also remove the surplus copper when the vegetables have been coloured green.

Special attention should also be bestowed on the cooling device. Formerly it was the custom to use zinc-lined wooden tanks, the cage containing the boiled vegetables being lowered into the tanks, and water admitted from below, so that the warm, dirty water ran off at the top.

New coolers of special type have recently been introduced into French practice, the cooling water running in at one side and out at the other; and this plan has been found to answer. The cooler, mounted on six strong iron feet, consists of a zinc-lined box, somewhat lower on the side at which the water enters than on the other, an overflow being provided on the latter so that the level of the water coincides exactly with the upper edge of the other side of the box. The appliance should be about 10 feet long by 3 feet wide, and placed in such a position that the waste water can run away easily into the drain. The blanched vegetables are placed in loose, inner boxes of tinned iron with perforated bottoms, the holes, however, being small enough to prevent the escape of even the smallest peas. Each cooler of the foregoing dimensions will take six loose boxes 3 feet long, 16 inches wide, and $3\frac{1}{4}$ inches deep, provided with strong sheet-iron

feet (six in number) at the corners and in the middle, so that the loose boxes are in contact with the cooling water on all sides.

The cooling water entering on one side of the cooler comes in contact with the vegetables on its way to the overflow, and carries away all impurities. Owing to the way in which the vegetables to be cooled are spread out, any skins, threads, particles of wood, etc., are easily removed.

In the corner of the cooler at the overflow is a draw-off tap, to enable the cooler to be cleaned out conveniently after use.

The cooler should be mounted so that the head (feed) end is against the wall, so as to leave room for working on both sides.

The question of colouring vegetables has been dealt with in various ways in the legislative enactments of different countries. The author will describe the method of colouring practised in France. Where this method is not allowed by law, colouring must either be omitted, or else performed with chlorophyll — a troublesome and unreliable process.

The filled tins must be cooled down by placing them on a stone floor in a suitable room. Here they are left all night, and are cleaned up next morning before being transferred to store. All tins whose lids have not become concave or are still springy must be put aside as imperfect. The use of water for cooling is wrong, apart from the fact that it facilitates rusting at the lapped edges.

The only exception is in the case of asparagus, water being used for cooling on the pretext that the colour stands better. The author, however, after trying both, found no appreciable difference between them.

The three chief factors in the preparation of preserved vegetables are: large enough plant, suitable raw materials, and scrupulous cleanliness in working.

It must also not be forgotten that the tins play a very important part, and should be obtained from a reputable maker. In very large preserving works it will be better to make the tins on the premises.

Peas, beans, and cabbage, are blanched in perforated copper cages, fitting into the boiling pans so that the handles project at the top and the cages easily lifted out.

Carrots, cauliflower, kohlrabi, and other light coloured vegetables, should be blanched in tinned iron cages; and the boiling pans should be tinned inside.

Asparagus requires special loose cages of perforated tinplate, of circular shape, the same depth as the length of the prepared asparagus, and covered with a lid. These trays are placed on a tinned iron grid, fitted at the sides with movable hooks so that the grid can be set higher or deeper in the water in blanching.

The asparagus cages are first set at such a depth in the water that only the lower ends of the sticks are wetted; and only when the operation

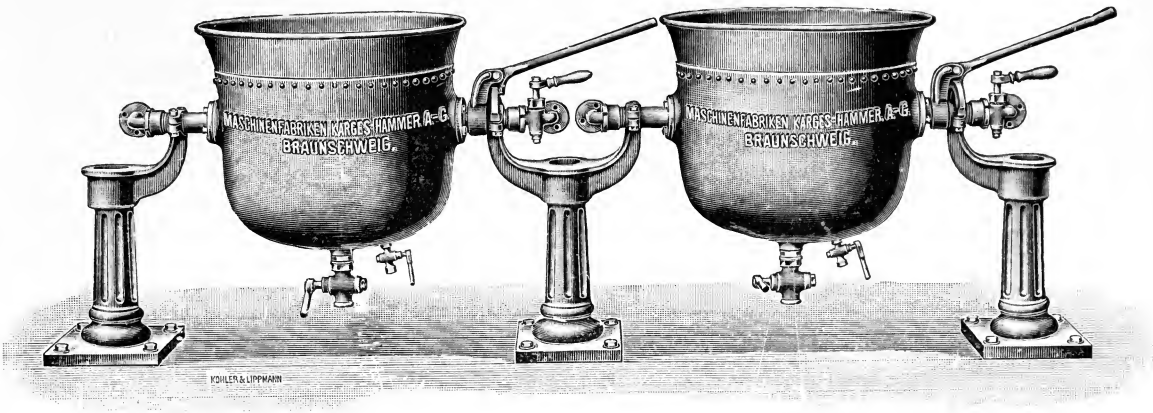

FIG. 6.—Boiling pans for vegetables.

is drawing near a close are the cages lowered so as to submerge the top part of the sticks and the heads. In this way a decidedly superior product is obtained.

All the filling liquor should be boiled with the necessary adjuncts in a morning, and turned into large clean vessels for any impurities to settle down. If no other course is open, the filling liquor is used without boiling, experience showing that it has no influence on the preserve. However, the former method is the sole means of obtaining a clear liquor.

Greened vegetables should not be exposed to direct sunlight, or the colour will be injured; and such vegetables should be worked up as quickly as possible.

In storing the filled tins, care should be taken to keep the lids underneath, *i.e.* the tins are stood on their heads—in the case of asparagus, because it is necessary that the heads of the asparagus should be upright.

In sterilising the tins the autoclave (Fig. 7) is filled nearly one-third full of water, the cage containing the tins is introduced, and a little steam is admitted. The heating of the tins should proceed slowly, so that by the time the water is boiling, the contents of the tins will have attained the same temperature. Until this point is reached the air tap on the lid is left open to allow all the cold air to escape. The tap being then closed, the pointer on the pressure gauge will move over the dial till the desired degree is

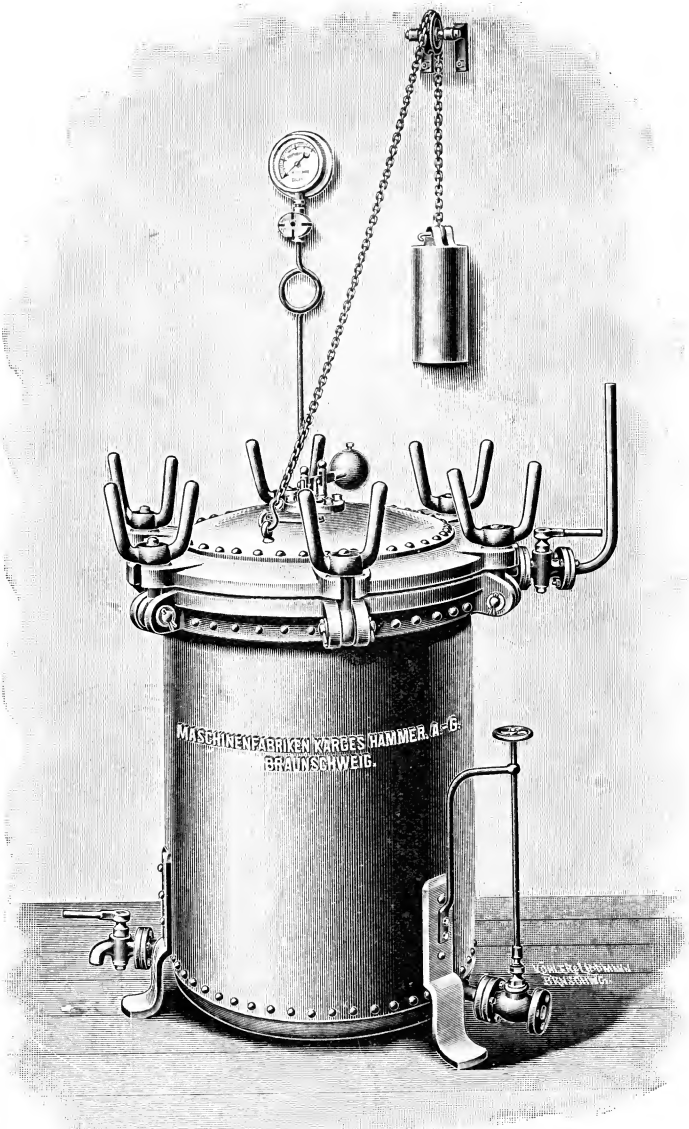

FIG. 7.—Autoclave.

attained, whereupon the valve is adjusted to maintain the pressure at that level; and when the proper time has elapsed, the steam is shut off, the valves opened, and the cage taken out.

When the above precautions are followed, there is no need for the fluctuations of temperature, so often read about in autoclaves.

Asparagus.

The fresh asparagus is sorted out according to quality, laid in fresh water, and after being peeled, is packed tightly in the blanching cage and boiled as described in pure water without any salt. A few loose stalks in the pan will show the boiler when the proper stage of boiling has been reached, *i.e.* when the stalks can be easily bent between the thumb and forefinger. The cage is then placed in plenty of running water (cold) until properly cooled, whereupon the stalks are taken out and packed in the tins.

For this purpose a sufficient number of selected stalks are grasped in the left hand, the right hand holding the tin, and are inserted into the tin head first, any additional stalks required to fill the tin being put in separately.

The filling liquor consists of boiled 2 per cent. salt water. Asparagus of the most delicate quality is preferably sterilised in an open water-bath, the small tins being treated for 55 minutes, medium size ones 120 minutes, and the largest 150 minutes.

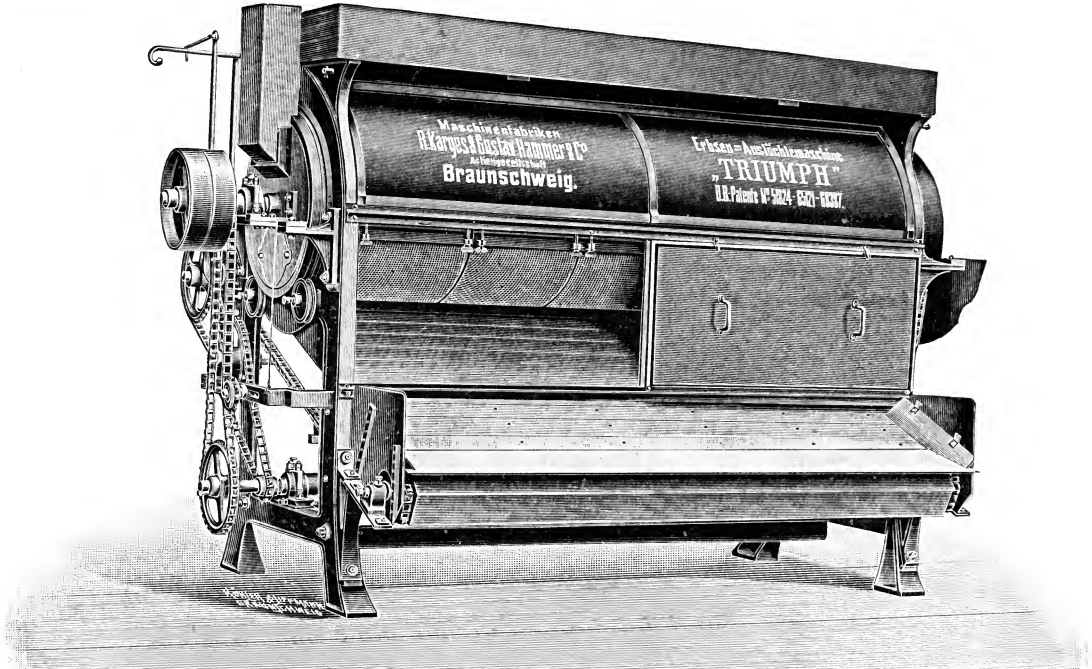

FIG. 8.—Pea-shelling machine.

Less delicate sorts, and such as have been kept for a time must, however, be sterilised in the autoclave for 15 minutes, the two smaller sizes at 235° F., and the largest at 240° F.

In the cooling process the tins are stood on their heads.

Peas.

The peas having been shelled in the machine (Figs. 8 and 9) are placed in a sorting machine, which is run at a low speed in order to ensure uniform classification.

The first boiling of the finer sorts takes 4–5 minutes, the larger sizes a little longer. The freshness and quality of the peas must always be taken into consideration, so that no definite rule can be laid down. The best method of boiling is to take about 45 lb. at a time, these being placed in a suitable copper cage. The pan is charged with about 13 gallons of water, and as soon as this is boiling, an ounce of copper sulphate is added and the cage introduced. Boiling is continued briskly until finished, the scum being stirred and removed with a suitable wooden spoon. The peas are taken out and cooled for packing.

The filling liquor consists of water containing 2 per cent. of salt and an equal amount of sugar.

To carry on the filling process quickly and uniformly the peas are turned into a tinned iron box of suitable size, fitted with handles

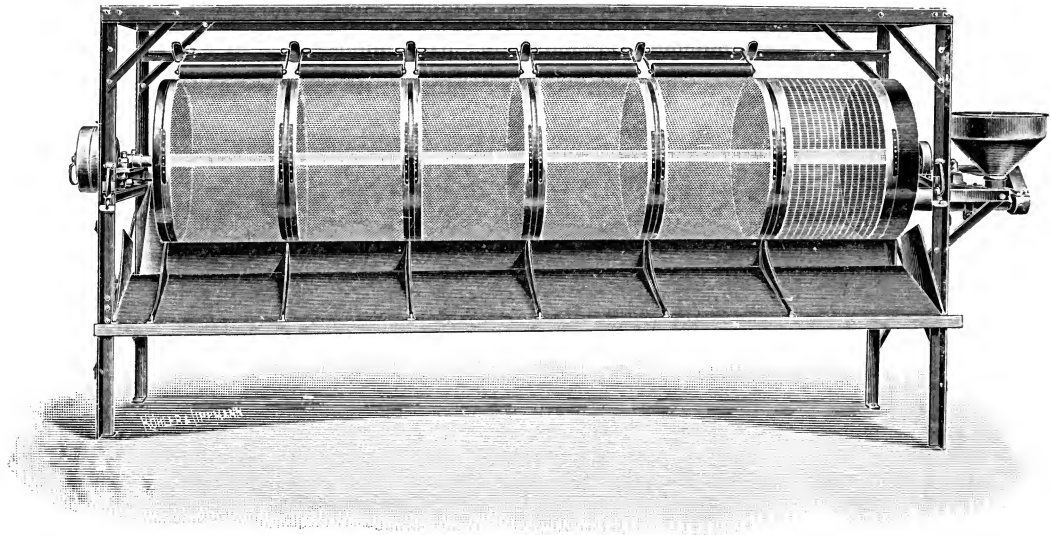

FIG. 9.—Pea-sorting machine.

on both sides. The filling liquor is poured into this box, and the tins are filled by dipping them into the mass and stroking the surplus peas off with the hand. The method is easy, its advantages being apparent to a beginner in the first few minutes.

Fig. 10.—Truck for conveying tins.

The tins are placed on trays, fitted on three sides with a border 3 inches deep but open on the fourth. Two holes for the hands are cut out on the right and left. Each tray should accommodate twenty $1\frac{1}{2}$ pint tins or thirty-five $\frac{3}{4}$ pint tins.

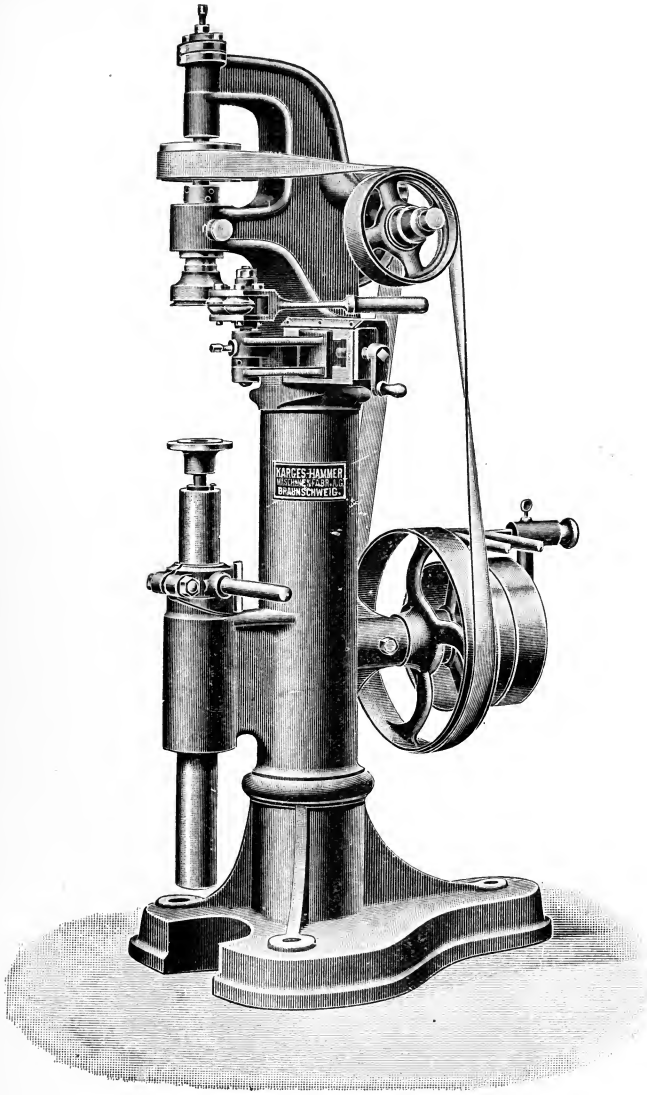

Fig. 11.

The trays are placed on a truck (Fig. 10), and taken to the closing machine (Fig. 11), which may be of the single- or double-lever type, either being efficient.

From this machine the closed tins are placed direct in the cages, which are also placed on trucks (Fig. 12) to facilitate conveyance to the autoclave.

The smallest tins must be sterilised for 15 minutes at 230° F., the 1½ pint tins for 20

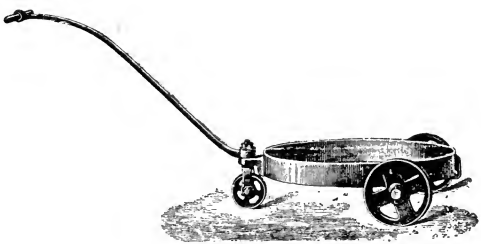

Fig. 12.—Truck for conveying cages.

minutes at 235° F., and the 3 pint tins for 25 minutes at the last-named temperature.

To prevent the larger kinds of peas from jellying, it is advisable to add one-tenth per cent. of sodium carbonate to the filling liquor.

In colouring peas with chlorophyll, very soft water or rain water is used, and all the vessels employed must be tinned or enamelled. For every 45 lb. of peas, 5½ gallons of water are heated to 195° F., 14 oz. of the colouring matter being added and the peas poured in. The tempera-

ture is then raised to boiling-point, the peas being stirred with a wooden ladle, and the colouring matter is allowed to react for 12 to 15 minutes, without actual boiling. After cooling and filling, the peas are sterilised in the usual way.

Beans.

The most suitable kinds of young, uncut beans, are the Haricot flageolet noir and Merveille de Paris of Vilmorin Andrieux & Co., Paris. These are broken off, top and bottom, by hand (without a knife), since at that stage of ripeness they are not stringy, and are sorted into two sizes, any very coarse specimens being laid on one side. The next stage is blanching in copper cages, as described for peas, except that only three-fourths of the amount of copper sulphate is taken. When cold, the beans are turned into tinplate boxes and filled into $\frac{1}{2}$ lb. and 1 lb. tins. The packer keeps a quantity of beans of uniform size ready to hand, to form a top layer and improve the appearance of the goods when the tins are opened. The filling liquor is water containing 2 per cent. of salt and boiled with a little bean foliage.

The $\frac{1}{2}$ lb. tins should be sterilised for 10 minutes at 230° F., the 1 lb. tins for 12 minutes at the same temperature, and 2 lb. tins for 16 minutes at 235° F.

Flageolet Beans.

The best kind is Vilmorin Andrieux & Co's. Haricot flageolet Chevrieux, which is distinguished

by its beautiful pale green colour, and possesses all the properties that can be expected from a preserved flageolet bean.

The beans can be shelled and sorted in the machine, but extra screens are required for this purpose. The beans are coloured in the same proportion as peas, but the operation must be started with cold water, and the temperature slowly raised to boiling. The smaller kinds are blanched for 7–8 minutes, the larger ones for 8–10 minutes.

The tins are filled only about four-fifths full, and plenty of liquor is added, the beans swelling up during sterilisation.

The filling liquor contains $2\frac{3}{4}$ per cent. of salt and a little soda (at the rate of about $1\frac{1}{2}$ oz. per 10 gallons).

First quality goods should be sterilised at 230° F., the half tins for 20 minutes, and the whole tins for 25 minutes; for seconds the temperature is 235° F.

Sliced Beans.

These are sliced in the machine (Fig. 13) and treated as already described. It is advisable to weigh the quantities put into the tins, in order to ensure uniform packing.

French Beans.

Young, tender beans are left whole, but larger sizes are cut into two to three pieces. Blanching

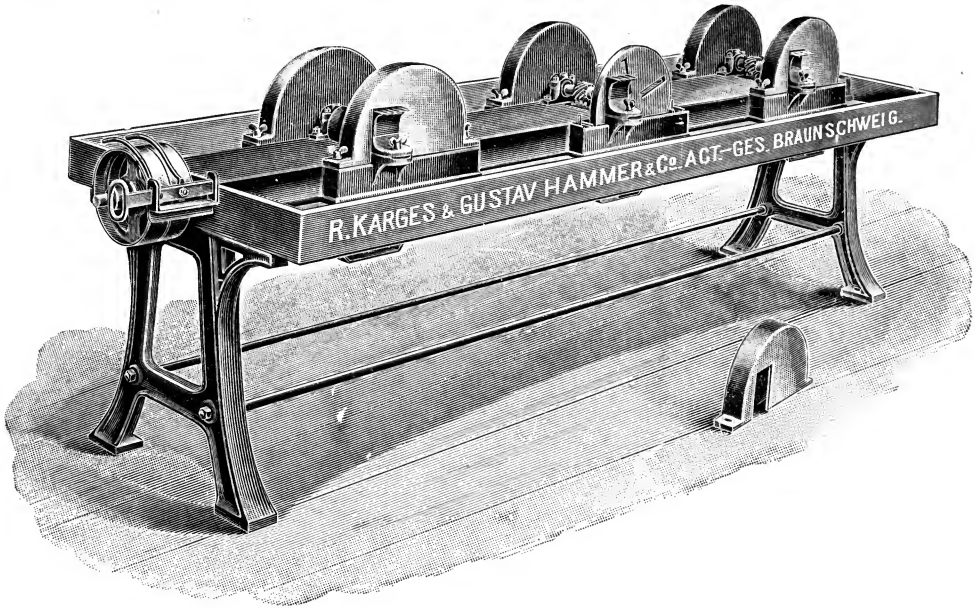

FIG. 13.—Bean-slicing machine.

and sterilising are performed in the same way as for other beans.

Carrots.

Freshly pulled carrots are trimmed off, top and bottom, and cleaned in a machine (Fig. 14), *i.e.* the thin skin is removed, this being best effected while the carrots are still fresh and have been scalded in soda and water. The roots are separated

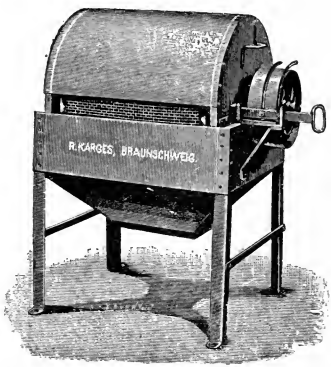

Fig. 14.—Carrot-cleaning machine.

into two or three grades before blanching, this last operation being performed in tinned pans until the carrots are soft right through.

The same filling liquor is used as for peas; and the best quality carrots are sterilised for 20 minutes, the small tins at 230° F., and the large ones at 235° F., the second quality being treated for 25 minutes at these temperatures.

A mixture of peas and carrots, packed in alternate layers in the tins, is highly appreciated.

Spinach.

Spinach may be left in the natural state, or coloured like peas. After boiling and cooling, it is chopped fine in a machine, and then mixed with salt and meat broth (or water) for packing into the tins. A previous heating to boiling is advantageous, as is also hot filling. Sterilising is performed at 245° F., half tins for 20 minutes, whole tins for 25 minutes, and double-size tins for ½ an hour.

Artichokes.

A distinction is drawn between whole artichokes and artichoke crowns. For the first-named, the small, young artichokes are boiled for about 10 minutes in plenty of water, then cooled and packed. Weak salt and water is used as filling liquor. The sterilising process is the same as for beans.

Artichoke crowns require greater care in preparation. The peeling of the crowns is best performed in a special machine, such as that made by Navarre, of Paris.

When working in small quantities, without a machine, the leaves are removed and the inner crown scraped out with a suitable knife, peeled nice and round from the outside, and placed at once in hot water containing neutralin. The crowns are then blanched, in small quantities at a time, in the same careful manner as asparagus,

i.e. in tinplate cages, cooled, and packed in asparagus tins. The larger crowns are put into large tins, the smaller into small ones. The usual method of packing is in deep quarter tins (the same shape as for mushrooms), and in the small and medium size asparagus tins, no larger sizes being used.

The filling liquor consists of 11 gallons of water, $2\frac{1}{4}$ lb. of salt, and $1\frac{3}{4}$ oz. of citric acid crystals.

Artichoke crowns are sterilised on the water-bath, the small tins being heated for 50 minutes after the boiling-point has been reached, and the large tins for 75 minutes.

All contact of the crowns with iron must be avoided; and the greatest cleanliness must be observed throughout.

Tomatoes.

Whole tomatoes are preserved in asparagus tins, undamaged fruit being selected in sizes suitable for the tins.

The tomatoes are wiped clean with a cloth, put into the tins without pressure, and covered with weak brine. The filled tins are heated slowly on the water-bath, the smaller sizes for 5 minutes (reckoned from boiling-point) and the larger for 10 minutes.

The tins are left to cool down without touching them, or the fruit will not remain whole; and for the same reason great care is necessary in storing them.

Tomato *purée* is an article that can be made in large quantities, and enjoys ever increasing popularity. To be successful it must be prepared from fully ripe fruit; and it is owing to the suitability of southern climates for tomato cultivation that the best fruit is obtained from Italy, France, Hungary, and warm countries generally. The fruit is first crushed in a mill, between stone rollers, the stalks having of course been taken off beforehand. The resulting pulp is placed in large tinned copper pans and heated to boiling, and then strained through a machine, being afterwards returned to the same pans and heated, with stirring, until three-fifths of the total weight has evaporated, 100 parts of tomatoes furnishing 40 of finished pulp.

This pulp, which, if desired, can be stained with tomato-red, is then filled hot into tins or glass bottles, which are closed and sterilised on the water-bath like fruit compote. If intended for storage in bulk, the pulp is filled hot into $\frac{1}{2}$ cwt. tins previously rinsed out with boiling water. The filled tins are closed at once, turned upside down, and left to cool.

These tins are fitted with lapped, or preferably soldered, ends, a 2-inch hole being left in the upper end for the introduction of the boiling pulp, and then covered with a small lid which is soldered down.

The pulp may also be stored in glass carboys holding 8–10 gallons, these vessels being thoroughly cleansed and kept ready filled with

hot water. When the pulp is ready, it is turned into a suitable pan to cool down a little, and is then filled into the just emptied hot glass vessels. The latter are stoppered with plugs of cotton wool, previously soaked in salicylic acid, and are then put into store.

Mixed Vegetables (Macedoine).

Fifty lb. of large carrots, cut in long slices, 20 lb. of young beans, sliced, and 50 cabbage turnips (kohlrabi), also cut. A portion of the carrots and kohlrabi may be shaped in the press. These having been blanched are put into a large vessel with $3\frac{1}{2}$ gallons of No. III. peas and the same quantity of flageolet beans II. (both washed with warm water and weak brine), then filled into tins and sterilised as in the case of beans.

Tinned Julienne.

Forty-four lb. of large carrots, 22 lb. of white cabbage, 5 heads of celery, $2\frac{1}{4}$ lb. of leeks, $6\frac{1}{2}$ lb. of beans, 1 lb. of parsnips, 10 onions, and an equal number of cabbage turnips.

These are all shredded, boiled separately, and finally mixed with $4\frac{1}{2}$ gallons of No. II. peas (washed) and packed. Sterilising and filling liquor the same as above.

Inferior qualities can, of course, be prepared by omitting some of the ingredients; or better qualities by the addition of morels, etc.

Leipzig All-Sorts.

This is a mixture of peas, asparagus, cauliflower, carrots, and morels, several grades being prepared according to the quality of the peas. The usual proportions are: peas, 60 per cent.; carrots, 26 per cent.; asparagus, 15 per cent.; and morels, 5 per cent. The latter if unobtainable fresh may be used in the dried state, being then softened, washed repeatedly, and blanched the same as if fresh. Fresh carrots and peas are generally used, with tinned asparagus.

Celery Chunks.

Small and medium size heads are dismembered, thoroughly cleaned with water and a brush, then blanched in water for 10 minutes, peeled and cut into chunks. The latter are left to bleach for several hours in water containing 1 per cent. of citric acid, taken out and packed in tins. The filling liquor consists of weak brine, also containing a little citric acid. The 1½ pint tins are sterilised for 25 to 30 minutes at 230° F.

Mushrooms.

The mushrooms are obtained from France in casks during the winter months, or rather from September to March. On arrival, the casks are opened and the contents washed for several hours in plenty of running water.

Neutralin is added in blanching, the mushrooms

being boiled for about 20 minutes, with frequent skimming, and cooled in fresh water. They are next sorted into three sizes, the smallest being put into the smallest tins, and so on. A $1\frac{1}{2}$ pint tin is reckoned to hold about 1 lb., and the smaller sizes in exact proportion, all being carefully weighed.

The filling liquor is prepared in advance, 22 gallons of water being boiled and treated to an addition of $4\frac{1}{2}$ lb. of salt, $3\frac{1}{2}$ oz. of citric acid crystals. The $1\frac{1}{2}$ pint and $\frac{3}{4}$ pint tins are sterilised for 50 minutes at 235° F., and the smaller sizes for 45 minutes at 230° F.

When fresh mushrooms are supplied they must be cleaned, trimmed off at the bottom, and freed from the brown skin by means of caustic soda.

Edible Boletus.

These fungi, which are often used in place of mushrooms, must first be cleaned up by removing the lamellæ under the pileus, then skinned and cut up into suitable slices. The sound stalks are also used.

In other respects the treatment is exactly the same as for mushrooms.

Morels, Orange Agaric (Lactarium), Chanterelles, etc.

These are cleaned up, washed, and well blanched in plenty of water, the scum being carefully removed.

After cooling, they are packed in tins, covered with brine the same as other vegetables, and sterilised as above.

Pickled Mushrooms.

The mushrooms are prepared as already described, packed with good wine vinegar, and sterilised, the 1½ pint tins taking 30 minutes.

Truffles.

Fresh French or Italian truffles are sorted into two qualities by cutting a small piece out of each truffle with a sharp knife, the truffles with dark flesh being classed as prime, the paler kinds as seconds. They are then scrubbed in warm water, preferably by hand, and carefully blanched for ¼ of an hour with white wine in a tinned or enamelled pan, ¾ of a pint of wine being taken to a pound of truffles.

The next step is to spread them out on a clean metal tray to cool, after which they are weighed into the tins. The half tins are reckoned to hold 7 oz., and the smaller sizes in exact proportion. Sterilising takes 30–40 minutes at 230° F., according to size. The filling liquor consists of the wine used for blanching, supplemented by as much fresh wine as is required.

If necessary, the truffles may also be skinned with a sharp knife, the skins being also preserved to form a spice for patties, truffled sausage, etc.

Pickled Gherkins (Cornichons).

The raw material is an important factor, and should always be obtained from a reliable firm, such as Vilmorin Andrieux & Co., 4 Quai de la Megisserie, Paris.

The stalks are cut off and the gherkins sorted into three sizes. They are then carefully washed and packed into suitable clean barrels. Dill may be used as spice, but nothing else.

A pickle is poured over them, consisting of 12 per cent. brine containing 25 per cent. of good wine vinegar; and the barrels are set out in the sun, in a yard or other warm place, with the bung-holes open, so as to quickly start a slight fermentation. When this has run its course, the casks are cleaned up, filled to the top with the same liquor if necessary, and bunged down.

For use, the gherkins are taken out of the barrels, washed, and packed with fresh wine vinegar spiced with tarragon. When it is desired to keep these small gherkins stored in the barrels for a long period, the fermented pickle should be run off and replaced by fresh 12 per cent. brine.

Salted Gherkins.

The proper selection of the raw material is also important in this case, and recent experience has shown the advisability of pricking the gherkins in a machine at the outset.

The gherkins are washed clean, wiped dry with

a clean cloth, and placed in well-cleaned wine casks of hard wood. A layer of vine and morella cherry leaves and dill flowers is placed at the bottom, another being used to cover the gherkins, and a third one intermediate between the others. The filled barrels are headed, a 5 per cent. brine being poured in through the bung-hole, and the barrels, loosely bunged, are set in a warm place or in the sun until fermentation is terminated. They are then cleaned up, any deficiency of brine being made good, and the bungs driven home, the barrels being placed in the cellar, where they are rolled several times before being placed in their final position.

Gherkins in Mustard.

Large, ripe, firm-fleshed gherkins are skinned, cut in halves, the core removed, and then cut into long strips. These are placed in tubs and well-sprinkled with salt, so as to form sufficient brine, in which the gherkins are left for several days.

The gherkins are then washed, packed in barrels with yellow mustard seed, a few laurel leaves and white peppercorns, small onions, sliced horse radish and shredded ginger, sufficient boiling wine vinegar being poured in to cover the whole. After a few days the vinegar is drawn off, boiled up, and returned to the barrels, the contents of which are then heavily weighted. The vinegar, however, must not be allowed to fall below 4 per cent., or it will have to be supplemented. In 3–4 weeks the gherkins should be clear and translucent.

Mixed Pickles.

These are a mixture of young, tender vegetables, preserved separately, each at its proper season, and stored (preferably in large glass jars) for mixing later on.

Small gherkins, young corn cobs, pickling onions, green and red capsicums, cauliflower, young beans, French beans, and French carrots, form the chief ingredients of the mixture, large capers and salted olives being also used by some makers.

All the vegetables are lightly blanched and left to stand for several days in strong brine in order to ensure their keeping. They are then put in jars with good vinegar, warmed up in the water-bath, and closed up. The vegetables may, however, be stored separately in brine in the case of very large quantities.

For packing in bottles or other receptacles, good 4 per cent. wine vinegar is used, this being spiced with an extract prepared in the following manner:— To 2½ gallons of vinegar add 18 oz. of black pepper, 9 oz. of ginger, 9 oz. of salt, 5 oz. of pimento or English spice, 3 oz. of white pepper, a few laurel leaves, and a little tarragon, allowing the mixture to draw for 14 days in the warm, and then filtering. In all cases it is important to carefully heat the filled bottles on the water-bath before closing.

Piccalilli.

The mixed pickles are packed with the following preparation instead of vinegar:—2½ lb. of best

English mustard powder are stirred up with a pint of best olive oil, and to this is added 2½ lb. of castor sugar, ½ lb. of salt, and 3–4 pints of good vinegar, with ½ pint of curry vinegar.

This latter is prepared from 3½ oz. of turmeric, 4 oz. of coriander, 1 oz. of black pepper, 1 oz. of ginger, ½ oz. of cardamoms, 1 oz. of carraway seeds, and ½ oz. of cayenne pepper (all powdered), with 2½ gallons of wine vinegar.

When all has been thoroughly mixed together the sauce is strained through a hair sieve.

PART III.

PRESERVED MEATS.

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PRESERVED MEATS.

In this section we shall deal, not with the manufacture of preserved meats on a large scale, but with the preparation of potted meats for tourists, and similar articles which can be profitably made in small works, the season for them falling at a slack time of the year.

An ordinary fireplace, preferably fitted with a hot hearth, will be quite sufficient, with a few large and small iron pans, a mincing machine, and a few perforated cages.

The recipes given are easy to carry out, but three main rules must be observed: best meat, best adjuncts, and scrupulous cleanliness.

The tins used should be those that can be opened easily with a key supplied for the purpose, the older form of tins being more difficult to sell nowadays.

The meat, whether boiled or roast, should be well cooked so that it shows no redness when cut through. Roast meat should be well browned, so as to have the characteristic aroma. Any vegetables used as garnish must be only slightly blanched.

The bones, sinews, and fat must be made into

strong stock for the preparation of the sauces or gravies.

The meat is weighed into the tins in all cases, a quarter tin, weighing nearly 10 oz. gross, always containing at least $\frac{1}{4}$ lb. of meat, except when garnished, in which case the meat will be about $\frac{1}{2}$ oz. less.

Best lard, preferably home-made, is used as fat, and any butter prescribed should be best fresh. Quarter tins should be sterilised for 50 minutes at 230° F., except in the case of veal or sausage, for which 45 minutes will suffice.

On removal from the autoclave, the tins are merely well rinsed over, and then set one upon another, lids up, to cool. Next day they are thoroughly cleaned with sawdust, examined, and put into store.

Veal Cutlets.

The cutlets are trimmed, the bone chopped off as close as possible, the meat sprinkled with salt and roasted in equal quantities of butter and fat. One cutlet is put into each tin, with a gravy prepared from the surplus roasting fat and a little flour.

Veal Cutlets and Peas.

The preparation is the same as above, except that green peas, prepared with fresh butter and chopped parsley, are added. Tinned or bottled peas may also be used.

Fricandeau of Veal and Rolled Veal.

The fricandeau is made of boned leg of veal, well larded, and the roulade of boned shoulder and breast. The prepared meat is roasted in fat, and cut in suitable pieces when cold. Peas are frequently added as garnish.

The gravy is made of equal parts of butter and fat, heated and stirred up with flour, the surplus roasting fat and a sufficient amount of stock being added. The whole is gradually raised to boiling over a slow fire, a little *purée* of tomatoes being finally added.

Roast Veal.

Boned leg of veal, with the usual adjuncts, is roasted, cut up, and packed in tins with gravy.

Veal Goulasch.

Shoulder, breast, and leg of veal are boned and cut up into pieces the size of walnuts. Onions, in the proportion of 18 oz. to every 22 lb. of meat, are fried to a light yellow in their own weight of lard, and then mixed with the meat, the requisite amount of salt, and a tablespoonful of red capsicum, the whole being boiled with a little gravy until cooked through. Of course the mixture is kept stirred all the time.

When finished, the meat is placed on a suitable sieve and packed, each tin receiving 4 oz. of meat and being then filled up with the sauce. An addition of tomato *purée* is also recommended.

Calf's Head en Tortue.

The cleaned calf's head is cut in two and left to soak in fresh water overnight. Next morning it is blanched for 1½ hours in weak brine, the flesh being taken off the bones when cold, and packed into the tins.

A white sauce, containing plenty of white wine, is prepared, mixed with tomato *purée* and strongly spiced. This sauce is poured over the meat, chopped truffles, mushrooms, and stoned salt olives, being added as a garnish.

Servian Rice Meat.

Selected veal from the leg and shoulder is cut up and boiled the same as for goulasch. Meanwhile one-fourth the quantity of best rice is half boiled, well salted, and mixed with the meat, without gravy. The whole is filled into tins and topped with the same sauce as for goulasch.

Beef Goulasch.

Any odd joints, such as neck, brisket, ribs, etc., can be used, all the fat and gristle being removed, the meat cut up into cubes, whilst all the bones, sinews, etc., are made into strong broth, which must be ready at the same time as the meat, for which it is to serve as gravy.

To every ½ cwt. of cut meat 10 lb. of chopped onions are well browned with 4½ lb. of beef fat.

The meat is added, with a suitable quantity of broth, and the whole boiled for about 25 minutes, with constant stirring. Finally about $2\frac{1}{2}$ oz. of capsicums and $1\frac{1}{2}$ lb. of salt are added. The flesh is placed on sieves, weighed, cut, and packed along with enough gravy to cover it completely.

Bouillon Meat.

A strong broth must first be prepared by boiling marrow bones for 6–8 hours, and in this broth the meat, preferably from the hindquarters and cut into pieces weighing 7–8 lb., is boiled gently for $1\frac{1}{2}$–2 hours, so as to be well cooked right through.

An hour beforehand there should have been placed in the pan a net containing spices to the amount of $\frac{3}{4}$ lb. of parsley root, $2\frac{3}{4}$ lb. of yellow turnips, an equal quantity of leeks, $4\frac{1}{2}$ lb. of celery, $\frac{1}{2}$ lb. of onions, $\frac{3}{4}$ oz. of peppercorns, $\frac{3}{4}$ oz. of nutmeg, and a few broken laurel leaves, per cwt. of meat. When the meat is taken out to cool the broth is well salted, concentrated a little if necessary, and strained through flannel, the fat being carefully skimmed off. This bouillon should set to a jelly on cooling.

The meat is cut into suitable pieces, weighed, packed, and covered with the bouillon.

Roast Beef.

A roasting joint or suitable cut from the hindquarters is freed from skin, cleaned, rubbed with

salt and pepper, and roasted in small pieces with the usual spices, the gravy being thickened to a sauce with bone broth and a little flour, coloured with burnt sugar if necessary.

Roast Beef and Onions or Sardines.

Roasting joints are cut up into suitable sizes, the pieces being salted and peppered and roasted in a mixture of butter and fat. When placed in the tins, the meat is covered with lightly browned slices of onion, or with a sardine cut in halves, and the corresponding sauce.

Steak and Potatoes.

Sirloin is skinned, cut into suitable pieces, beaten, salted and peppered, and roasted quickly in butter; then placed in the tins, garnished with a few small baked potatoes, and poured over with the surplus roasting fat.

Hungarian Sirloin.

The sirloin is prepared as above, larded with strips of bacon rolled in red capsicums, and roasted. When done, the meat is cooled, cut into suitable pieces, and put into tins with the gravy.

Székely Goulasch.

Lean pork, preferably the belly parts freed from fat, is boned, cut into cubes, and prepared in the

same manner as beef goulasch, except that a smaller amount of capsicums is taken.

Meanwhile a quantity of sauerkraut is prepared, equal portions of this and the goulasch being placed in the tins. Tomato *purée* is added to the goulasch sauce.

Ox Tongue with Purée of Peas or Sauerkraut.

The fresh tongues must first be pickled (*see* Pickled Tongue), or else pickled tongues are purchased from the butcher. They must be boiled for about 2 hours to enable the skin to be removed.

In the meantime a well-spiced *purée* is made of shelled peas, with plenty of fat, and with this the tins are filled half full. The tongue is cut into pieces about 4 oz. each, and these are placed in the tins and covered with browned butter.

Another method is to fill the tins half full of prepared sauerkraut and lay the slices of tongue on top.

Ribs of Pork and Sauerkraut.

Smoked ribs of pork are slowly boiled for about $\frac{3}{4}$ of an hour, divided into $\frac{1}{4}$ lb. pieces, and placed in tins already half full of sauerkraut.

Vienna Sausage and Sauerkraut.

The sausages, which must be perfectly fresh, are first placed in hot water, and packed into tins (three to four in each) which are then filled up with sauerkraut.

About 1 cwt. of raw sauerkraut is used per 1000 tins. This quantity is boiled in a tinned pan, and at the end of an hour is mixed with 2½ lb. of flour fried in an equal quantity of lard, another 7 lb. of lard being added to the sauerkraut by degrees.

Beef *à la Mode.*

Leg of beef is laid in a pickle, half vinegar and half water, spiced with onions, laurel, lemon slices, and pepper, for several days, then stewed with plenty of fat, cut into slices and put into tins with the gravy, the piquant flavour being heightened by adding white wine. Young or preserved carrots and half-boiled potato cubes are added as a garnish.

Roast Hare and Macaroni.

The hare is cut up, freed from skin, and the best joints, back and hind legs, are placed in pickle for a few days. This pickle is made by boiling vinegar with twice its volume of water, a few slices of onion and lemon, juniper berries, laurel leaves, and rosemary, with the necessary amount of salt, the meat being introduced when the pickle is cold.

After pickling, the meat is dried, well larded, and roasted with lard. The resulting gravy is prepared with plenty of sour cream, and strained like all sauces. The cold hare is cut into suitable pieces, and put into the tins along with the sauce. Macaroni broken into small pieces, boiled till half soft in water, and then larded with good fresh

butter, is used as a garnish, a tablespoonful being put in at one side of the tin. About 3 lb. of macaroni will be enough for 60 tins.

The heart, liver, and forelegs are roasted by themselves, to be used later on, like the trimmings from the main joints, for hare "paste."

Roast Venison.

The preparation is the same as for roast hare, and a sauce with plenty of sour cream is used. It is advisable to add one-third of Italian red wine to the pickle. The latter, however, is not used in preparing the sauce, water being sufficient when no stock is available.

Roast Wild Boar.

The flesh is trimmed free from fat, cut into suitable pieces, and steeped for 6–8 days in a mixture of vinegar and red wine, plentifully spiced with onions, a few garlic bulbs, crushed juniper berries, a few laurel leaves, cloves, pepper, a little lemon peel, and chopped ginger. The sauce is prepared with sour cream, made piquant with spices.

Mutton and Cabbage.

Boned leg and shoulder of mutton are roasted with salt, garlic, and a mixture of butter and fat (equal parts), the bones being placed in the pan in order to make a strong gravy.

Three oz. of the meat are placed in each tin, along with a piece of cabbage, and the tin filled up with gravy.

Thirty small hearts of cabbage are taken to every 44 lb. of meat, and, after being washed, are quartered and lightly blanched in salt water.

Ox Tongue.

The cleaned tongues are well beaten with a wooden mallet and then rubbed thoroughly with a mixture of salt, pepper, and saltpetre, about $3\frac{1}{2}$ oz. of the latter being sufficient for 30 tongues.

The tongues are next laid in suitable staunch wooden tubs and weighted down. If sufficient brine is not formed, water is poured in so as to cover the tongues, and the tubs are placed in a cool place.

At the end of a month the tongues will be ready, and after being cleaned are boiled in fresh water for about 3 hours, to make them skin easily. They are then trimmed into the proper shape, and each is put into a separate tin. The best gravy is meat broth, freed from fat and mixed with a few sheets of gelatine, so that the broth will jelly.

After the tins have been soldered down they are heated on the water-bath until the lids bulge, whereupon a small hole is punched in each lid, and after this hole has been soldered up again the tins are heated at 243° F. for an hour in the autoclave.

Savoury Paste "Appetit-Pain."

Twenty-two lb. of veal are roasted with a mixture of fat and butter (half and half), 4½ lb. of fat pork are boiled at the same time, and 2½ lb. of sliced onions are lightly browned in 2 lb. of fresh butter, the whole being set aside to cool.

Two and a half lb. of stale bread, previously softened with water, are now pressed well, mixed with the yolk of 40 eggs, and incorporated with the cold minced meat, the onions, 2½ lb. of well-cleaned sardines, the juice of two lemons, 3½ oz. of capers, half a tin of truffles, and pepper, salt, and nutmeg, the whole being passed through a mincer. When the mass has passed through the finest disc of the mincer it is laid on a marble slab and worked up with the beaten-up whites of the 40 eggs and a little pasty spice. Should the mass be too firm to spread easily, it is mixed with the surplus roasting gravy or the broth from the boiled pork.

The mixture is filled into tins with a spoon, the tins being closed and sterilised like other preserved meats.

Beef Paste.

Twenty-eight lb. of beefsteak or other tender joint are roasted with 2½ lb. of butter and a suitable quantity of salt. Meanwhile 11 lb. of fat pork are thoroughly boiled, and 2½ lb. of onions are browned with 1 lb. of butter. The

meat bones and trimmings are boiled to soup with leeks and celery.

The cooled meat is cut up, mixed with the onions, spice, and a half tin of truffles, and put through the mincer, after which the whole is turned on to a marble slab and worked to the proper consistency with a bottle of sherry or madeira and the rest of the meat gravy and soup, plenty of spice being used. Finally it is put into tins and sterilised as usual.

Hare Paste.

Twenty-two pound of roast hare and 13½ lb. of boiled fat pork are boned and cut up, being then mixed with 1¼ lb. of browned onions, 1¼ lb of salt, a little pasty spice, and truffle trimmings, and put through the mincer. The whole is then mixed with 4½ lb. best lard, the juice of two lemons, and the gravy or soup from the meat, and filled into tins.

Venison Paste.

This is prepared in the same way as hare paste, except that venison is used.

Game Paste.

This group of preparations comprises only such game as pheasants, snipe, pigeon, etc. In all cases the roasted meat is separated from the bones, and reduced to the proper consistency with best butter. Lard is used only in the roasting.

Foie Gras Paste.

Thirty-three pounds of goose liver, thoroughly washed in water, are boiled with a little water until the inside is no longer rare. Meanwhile 44 lb. of fat belly of pork are boiled well, and the two when cold are mixed with thirty softened stale rolls, and put through the mincing machine to chop the mass up fine.

The resulting mass is next kneaded on a stone slab with $\frac{3}{4}$ lb. of salt, pasty spice, and $2\frac{1}{2}$ lb. of chopped tinned truffles, the later being in cubes large enough to be visible in the mass. Finally the beaten-up white of 120 eggs is added, and the mixture put into tins. The simplest form to use the white of egg is dried egg albumin, 13 oz. of which, dissolved in 5 pints of cold water, will correspond to the above number of eggs.

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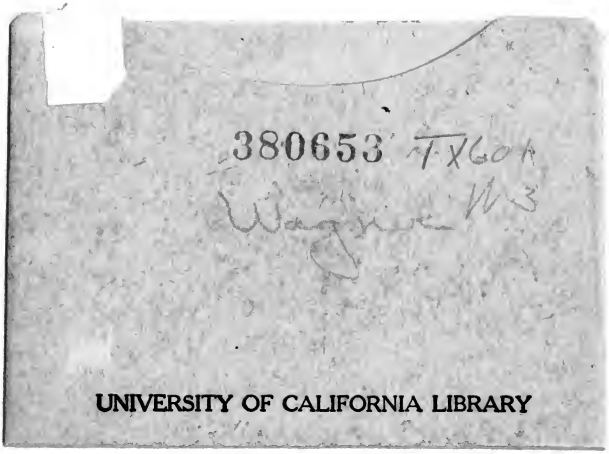
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